A Lecture
ON
THE NEW NEUROLOGY.

Delivered at the National Hospital for the Paralysed and Epileptic.

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GENTLEMEN,—Tennyson has made familiar to us the fact that the old order ever "changeth, yielding place to new." The changes, as a rule, are slow; they result from the gradual evolution of knowledge, in which one discovery rests upon another and the series constitutes a set of stepping-stones which may bridge a brook of baffling current or may afford the means of ascent to a higher level. We may only realise the change when after the progressive ascent we pause and scrutinise that which now lies below us and could not be seen before in true relations when we laboured on its level. But sometimes there comes an advance in knowledge of a much more sudden character. Some pioneer in exploration meets a steep elevation, he finds a new path and, stimulated by hope, ascends and leaves his footprints by which others can securely pass. Once gained, the new position gives a new aspect to old ground. Familiar relations are changed. The landmarks we were wont to trust are seen to have been misunderstood and the paths are perceived by which our straying feet went wrong. We cannot, perhaps, feel absolutely certain that our new view is quite correct. But we can clearly see that it is nearer the truth of things than were our old conceptions. If many have followed in the track, and all are agreed in their discernment, we obtain an assurance of approximate accuracy which we may for the present trust. This is the language of allegory, but it applies closely, I think, to the revolution which our conceptions of the constitution of the nervous system have undergone in consequence of certain "epoch-making" observations.

The observations I refer to are not quite recent, but their revolutionary character has compelled us to wait for confirmation before we could accept them. It is during the last nine years that our conceptions of the elementary arrangement of the nervous system have been changed by histological discoveries which clear many obscurities, give new significance to facts before imperfectly perceived, and involve new pathological conceptions, general and special. Although new difficulties have arisen, as they must do at each step forward, numerous facts which before were mysterious become intelligible and their elucidation constitutes confirmation of the truth of the discoveries. The evidence has been received as adequate by all physiologists. Pathologists must therefore accept them and reconstruct their conceptions. It is accordingly necessary to give an outline of the constitution of the cerebro-spinal nervous system as at present discerned, even of that which is not of direct present application to pathology but which may become so and is essential for the perception of the whole. The facts have been found also to be true of the sympathetic system.[1] These discoveries are the result of a method of metallic staining, first devised in detail by Golgi of Pavia, in which silver is reduced in the structures that have been impregnated with chromium during hardening and usually also acted on by osmic acid. It displays the minute structure of the grey matter with a distinctness and in a manner which reveal facts before altogether unseen. Almost the first definite steps were the results obtained in the invertebrata by Nansen before he turned his face from polar cells to Polar seas. But the first important disclosures which involved the radical change in conception were due to Ramon y Cajal of Barcelona[2] and to the veteran von Kölliker,[3] supplemented and diffused by Waldeyer.[4] Since 1890 there has been incessant work at the subject and Ramon y Cajal has presented to us the chief facts that had then been ascertained in the Croonian Lecture to the Royal Society in 1895.

All nerve-fibres are prolonged processes of nerve-cells. They consist of an axis with a "medullary sheath" around it when the course is long, either within or outside the central organs. Most cells have but one such medullated process, larger than the others; some have two. The other processes are short; they soon divide and branch within the grey substance; the long medullated processes also at last end by dividing and ramifying. The conception formerly held may be thus stated. Of the ultimate divisions of the short, quickly-branching processes in the grey matter some had been thought to join the terminations of similar processes from other cells, either neighbouring cells in the grey matter or the terminal branches of medullated nerve-fibres, processes of cells far away. Thus of the motor cells of the spinal cord some of the processes, passing backwards, were believed to join those of sensory cells in the posterior cornua, of which the medullated process was a fibre of the posterior root. The constituent elements of the nervous system thus formed, by branch union, one continuous complex network with paths for the nerve impulses, due to union and continuity of the cell processes. The paths in actual use were determined not only by such union but also by differences in "resistance" among those which continuity provided. The "resistance" which thus permitted an energetic impulse to spread more widely than a slighter one was varied in degree by functional activity; it was diminished by the repetition of the same activity and it was also varied mysteriously by other nerve impulses from various sources. It might thus be increased so as to "inhibit" action. In so far as any attempt was made to conceive its seat it was thought of as in the cells or in the feltwork of uniting processes in the grey substance called "spongy" from its blending trabeculæ.

Much of this conception is retained. But the more the methods of examination were improved actual union of the branches of cell-processes became less perceptible under the microscope. The development of the use of staining agents, especially metallic, has increased the power of discrimination. Variety of aspect can be thus produced in structural elements which before were indistinguishable. By the use of such methods, and especially that of Golgi, the branches of the processes and fibres have been clearly traced and they have been found not to unite. They are distinctly seen to end in the structural material in which the nerve-cells lie, sometimes by an enlarged knob-like extremity, sometimes by a point. Often the branches cross and even interlace, with the semblance of union, but close observation shows that it is a semblance only. Discontinuity is found to be the general rule. Whether invariable or not is still undecided; it is most difficult to exclude union in the dense felt of fibrils which the branching processes form in some parts, the "neuropilema" of His, and moreover the general rule of free endings is compatible with occasional actual union.[5] From this it follows that the "nervous system" consists of discontinuous elements, each a cell body with its processes, long and short. For these elements the name "neuron," proposed by Waldeyer,[6] has been all but universally adopted; for distinctiveness, its plural is formed according to the living language and not the classical form—in English it is "neurons," in German "neuronen," in French "neurones." The chief process, the medullated, or axis-cylinder process, is called the "axon," or "axis process."[7] The branching processes in the grey matter are termed the "dendrons," the branches of these "dentrites."[8] From the axons there often spring fine fibres which pass off at right angles, termed

[1] Von Kölliker: Histologische Mittheilungen, Würzburger Sitzungsberichte, Nov. 23rd, 1889.
[2] Previously, Internationale Monatsschrift für Anatomie, 1890, Band vii.
[3] Loc. cit.
[4] Berliner Medicinische Wochenschrift, 1891, No. 28.
[5] Cf. Masius: Archives de Biologie, 1892. Fritsch: British Association Report, 1892.
[6] Loc. cit.
[7] Because the "axon" is the separate "nerve," when one exists, an attempt has been made to make current the use of "neuron," for this alone. But etymological consistency has little influence on the vitality of names. The use of "neuron" for the whole element has become so general that resistance to it is futile. Moreover, the conception attached to it in use is already definitely detached from its etymology. Lastly, although the cell-body and its processes are one, to have only the word "cell" for the whole element, a word that will still inevitably be applied to the cell-body, leaves the latter without nominal distinction from the other two parts of the element—the neuron and the dendrons. Hence the word "neuron" is here used in the established sense.
[8] "Dendrite" has also been used as equivalent to "dendron," and still is; but the need for distinguishing the twigs from the process itself makes is highly probable that this convenient separation of the words will become universal.

"collaterals" by Ramon y Cajal, the relations of which are imperfectly known. They have been seen to end by a T-like division and ultimate branching.

The definite and extended discernment of another fact deepens the importance and application of that just described. Thirty years ago[9] Max Schultze discovered and depicted the fact that the axis-cylinder is compound and not simple, that it consists of a large number of fibrils—"primitive fibrils," he termed them. He pointed out that they could be traced throughout the fibre, separated by a finely granular substance. They could be well seen where the axis-cylinder widens in joining the nerve-cell—that is, where the cell narrows into its chief process. Others could not see the significant striation, among them Ranvier, whose work dominated science throughout the next fifteen years, and the fact was practically ignored. The axis-cylinder was regarded as simple and integral, until recent methods have enabled the clear establishment of the correctness of Max Schultze's observations. The number of fibrils which constitute an axis-cylinder is considerable. Obersteiner has found that there are about fifty in an axis-cylinder of the sciatic nerve of the frog.[10] These fibrils consist of a conducting substance, the "hyaloplasm" of Leydig and Nansen (so termed from its greater translucency in hardened tissue). This is isolated by a slightly granular material, distinguishable chiefly by its difference of aspect and staining after the changes produced by hardening agents. It has been termed the "spongioplasm"—"plasm" because it also has a soft consistence, "spongio" because it is said to form trabeculæ which constitute the chief element in the ground substance or matrix of the "spongy" grey substance[11] in which the cells lie and their processes branch. From this compound constitution of the axis we must infer that its terminal division into branches is merely the separation of these fibrils, first into groups and at last into single fibrils—"primitive fibrils." It is so at the periphery and in the grey matter. The final twigs may be termed "axites," if a special designation seems needed.[12] The short branching processes have been found to consist of similar fibrils, and this is true also of those supposed to be extensions of the substance of the cell and therefore called "protoplasmic processes." This name should be given up with the conception attached to it. The opinion that their function is to convey nutritive material to the cell-body was, indeed, never more than an hypothesis, resting on no real foundation.[13]

With the recognition of the fibrillary constitution of the axon and dendrons has been associated an equally important recognition of the fact (most clearly depicted by Max Schultze[14]) that their fibrils pass through the body of the nerve-cell without interruption. Those of the axon diverge to pass to the several dendrons, but those of the latter do not pass all to the axon. Some pass directly to other dendrons, so that in such there must be conduction from the cell as well as towards it.[15] Moreover, both Ramon y Cajal and Kölliker have observed in certain cells of the cerebellum all the fibrils of an axis-cylinder pass directly to a dendron, scarcely entering the body of the cell. Twigs from such processes of small cells, especially in the invertebrata, have been said to join the elements of the neuroglia.[16] The fact is in harmony with the origin of both from the same embryonal tissue. The differentiation of the nerve elements from this may leave some blending of structure. It must be remembered that there is much uncertainty regarding the nature of many of the smaller cells, and it is conceivable that some are nervous and some neuroglial and that there may not be always actual separation of their connexions.

An essential difference between the axon and the dendrons cannot as yet be established. Branching does not differentiate them, for the axon also branches after a long course. Nor does either multiplicity or length. The cells of the posterior ganglia of the cord have but one axon and one dendron, united for a short distance as the single process of the "unipolar" cell. These two processes are of nearly equal length in the case of those cells that give rise to the fibres of the posterior median column; these, reaching the cord by the posterior roots, ascend to the level of the medulla, while the other division of this cell-process probably comes from a muscle as far away. We see also in this instance the absence of any real distinction from the direction of conduction. Although the axons of the motor cells conduct from these, so also must some of those dendrons to which fibrils pass from others. Moreover, in the case of the posterior root-fibres which go to the local grey matter the long fibre from the periphery conducts towards the cell; the shorter fibre, which soon branches in grey substance, conducts from it. Opinions may differ as to which should be regarded as axon and which as dendron, but analogy suggests that the latter should be that which soon ends in the grey substance. Yet it is difficult to avoid regarding each fibre of the cells related to the posterior median column as an axon. There is no reason for regarding either a dendron or an axon as an essential element of a cell. Yet the distinction is necessary and the general application of the names is justified by the common difference between the one medullated process which passes out of the grey matter and the other numerous processes which are not medullated and soon divide within the grey substance.

The extent to which the physiology of the nervous system is inferred from its minute anatomy is illustrated by the revolution in our conceptions produced by the discovery of the discontinuity of its elements, the fibrillary constitution of the conducting structures, and the course of the fibrils. These, passing through the nerve-cells without interruption, can merely conduct through the cell-body as they do elsewhere in their course. With this fact disappears the old idea, so simple, apparently so adequate and reasonable from its superficial analogies—the idea that the nerve-cells are the seat of the production of nerve-impulses, that in them "nerve force" is generated from the latent energy stored in the nutritional compounds which have entered into their constitution. But we cannot have such generation where the fibrils are continuous. For it we must look to their extremities, formerly supposed to be in the cell-body, now perceived to be in the "spongy grey substance." The process must be where the continuous fibrils begin in the centre, as it is in the skin and other parts of the periphery, in the case of fibrils that conduct thence. As all the nerve-impulses that reach the centres, through which external influences act and the environment is perceived, originate in the minutely separate nerve material at the extremity of the afferent fibrils, so all the outgoing impulses and those which pass from one part of the centres to another originate in their special form at the analogous extremities of the fibrils in the grey substance. We must conceive these impulses arising in the extremities of the "cellulipetal" dendrites (to use the somewhat cumbersome term of von Kölliker) being excited in some way by the stimulus of the impulses which reach the contiguous extremities of other "cellulifugal" fibrils, dendrites, or branches of the axon of a distant cell. The incoming impulses may excite those that go out, as impulses are excited at the periphery by other forms of energy; or there may be a process of conduction through the intervening ground-substance—the matrix in which the cells lie and the dendrites end. For the increase in the amount of nerve energy which often takes place there must be more than conduction, its production must be "excited" by that which is conducted. We can conceive such excitation without continuity, especially when we consider that the stimulation of muscular protoplasm is by the impulses in nerves which terminate on the fibres, and not in continuity with the contractile substance—indeed, separated from it by a structure apparently quite different in its simpler nature.

If this conception of the origin of the impulses in the terminations of the fibrils seems less easy than their origin in the more massive nerve-cells we must remember how multiplicity neutralises minuteness. Indeed, the minuteness of the conducting fibrils almost involves a multiplicity of

[9] In 1868; see Stricker's Histology (New Sydenham Society's Translations). The observations were confirmed by Babuchin in 1868 and 1869.

[10] Personal communication.

[11] Apathy, Biologisches Centralblatt, 1889. The term "spongy grey substance" was before in use on account of the sponge-like interlacement of the cell-processes. The conception attached to it has thus become somewhat confused.

[12] Especially since one writer has termed them neurites, which would be confusing unless the axis-process were termed the "neuron," as it certainly will not be. The only proper use of this word (neurites or neurones) would be for the terminal twigs in general.

[13] That these dividing branches, long and not obviously permeable, should be the channels by which the cell receives that which could pass directly through its walls was simply a positive inference from the negative fact that no other function was obvious. That we must cease to consider these processes "protoplasmic" and nutritional was insisted on in 1890 by Rabl Ruckhardt (Neurologisches Centralblatt).

[14] Loc. cit.

[15] Von Kölliker: Würzburger Sitzungsberichte, Nov. 23rd, 1889.

[16] Among others by Ladowsky: Verhandlungen des Medicinischen Congress, Berlin, 1890, Band ii., p. 92.

minute sources of nerve impulses—which must, moreover, be far from minute in comparison with the molecules from the latent energy of which the impulses proceed. All modern discoveries prepare us for finding every mass to be an aggregation and each perceptible quantity of energy to be made up of minute constituents, every one of which is definite both in its separate character and in its contribution to the effect of the whole. The finely divided nerve-substance will constitute a total source of energy as adequate in extent as a nerve-cell, with a more obvious facility for the renewal of the molecules lost in functional action and far greater opportunity for varying relation to the structures from which the impulses are received.

What then is the function of the nerve-cell? The one certain fact established by evidence that is secure is that on it depends the life of the nerve-fibres—the vitality of all the processes, equally that of the dendrons and of the axon. The evidence of this, the immediate degeneration of any separated part, is well known. It is less conspicuous in the case of the dendrons but sufficiently certain. How the influence is exerted we can only surmise. The nucleus of every cell is its life centre, and in some way the nutrition of the protoplasm is determined by it. The cell-body has a complex structure, dimly perceptible by the help of reagents, at present beyond our practical comprehension. One distinct fact, however, is that the protoplasm of the cell extending into the narrowing axon thins away between the outer sheath and the white substance, becoming unrecognisable until one of the many nuclei is reached. Each of these is surrounded by like protoplasm also thinning off along the fibre until invisible. It is certain also that if the cell-body and nucleus are destroyed or the fibre separated the process of degeneration begins by changes in these nuclei. They seem to be concerned in carrying on the influence of the distant cell, and it is not easy to conceive any other path for this influence than a thin layer of protoplasm, within the sheath, continuous from nucleus to nucleus, vitally influenced by these and conveying, by its own nutritional state, that of the cell. A space in this position is rendered visible by reagents which make the contents of the sheath shrink. Indeed, coagulated material in small quantity can be seen within it.[17] This has been regarded as evidence of the presence during life of such a space as is here assumed to contain connecting protoplasm.

Many facts previously obscure became more intelligible in the light of the new discoveries. The knowledge that the cell governs the nutrition of the fibre and the belief that from it proceeded the nerve impulses involved a correspondence in the direction of nutritional influence and of conduction, and it was found, in fact, that conduction and degeneration were in the same direction as a rule, but only "as a rule." It was untrue of the sensory nerves. These coming from the cells of the ganglia on the posterior spinal roots degenerate downwards, but they conduct upwards—an anomaly which had to be simply ignored. The fact is now seen to be in harmony with others. The arrest of secondary degeneration in the grey matter, the fact that the degeneration of the fibre which enters the grey matter never passes on to the next nerve-cell, through which conducted impulses must pass, was mysterious when they were believed to be in continuity. The discontinuity explains it at once. The degeneration is limited to the single neuron. The division of the axis-cylinder at its terminal ramification, whether that of the sensory nerve in the skin or of the motor nerve in the muscle, was scarcely intelligible when the axis-cylinder was regarded as a single conducting path; it is so when we perceive that the apparent division is simply the separation of its constituent fibrils, each a distinct conducting path. This fact is, moreover, especially important in relation to the minute localisation of the various forms of sensation in the skin. The sensory nerve-fibres themselves are not numerous enough to subserve this localisation, which could not result from the division of an axis-cylinder that conducted as a whole. The fact that the special form of energy termed a "nerve-impulse" may arise in a fibre in its course under the action of a stimulus, that the capacity of the fibres is not limited to "conduction," is less surprising if we conceive all such impulses as produced at their extremities.

While old difficulties thus disappear and many facts become more readily intelligible, so great a change of our conceptions involves new difficulties. Not only are the structures concerned most minute, but their discernment depends on the use of reagents which reveal them by developing differences in aspect due to chemical changes; new physical characters have been produced by other agents of the same nature. There seems but little original difference in consistence between the material that constitutes the conducting axis of the "primitive fibrils" and that of the separating substance. Both are apparently almost diffluent during life, and are indistinguishable physically until their difference in constitution is revealed by the action on them first of the chemical agents that harden and then of those that stain.[18] Both processes involve molecular chemical changes which multiply initial differences and leave the actual amount of these more obscure than we are apt to think.

The conducting element of the fibrils, the "hyaloplasm" or "kinetoplasm," is said to be more diffluent than the separating "spongioplasm," but the difference may be chiefly due to the hardening agents used. Continuous within the tubules and through the cell-body into the dendrons it has been said that beyond these it is also continuous with similar material in the matrix of the spongy substance. Into this also the spongioplasm is said to pass and form a trabecular structure. The fact that the fibrils, as stained by Golgi's method, apparently end must indicate that these elements, if continuous with those of the matrix, are different in nature in some degree. The difference may be much exaggerated by reagents, and yet sufficient to constitute the functional discontinuity which is generally assumed to be as structurally absolute as it appears in the sections. Until we know what the structure of the matrix is we can scarcely conjecture the nature of the process that occurs in it between the dendrites. "Conduction" may have been too readily regarded as impossible and it is not clear that actual conduction of nerve-impulses is incompatible with the augmentation which we include under the term "excitation." An increase must occur when, for instance, in many reflex actions the afferent impulse that reaches the spinal cord is minute in proportion to that which leaves the centre. We seem thus to have a process of stimulation comparable to that in the cutaneous nerves (themselves apparently analogous to dendrites) under the influence of some other form of energy from the outside. In this connexion it is especially noteworthy that many dendrites terminate in knob-like enlargements, suggesting receptive functions. We do not know the nature of a "nerve-impulse." We must, however, assume that it is energy in some form of motion released from that previously latent in the nerve substance, apparently the "kinetoplasm" or "hyaloplasm." Chemical change occurs by which simple compounds are formed as in all similar processes and the simplest conception is that the process is like that in a train of explosive material, modified, restricted, but perhaps accelerated by the influence of life.[19] The motion of a touch which acts upon the nerve-endings in the skin reaches them by passing through the skin as the simplest form of motion; so also pass the special forms of wave-motion that constitute electricity and heat. A differentiation of the nerve tissue in the ending seems to enable their molecules to receive one special form of motion most readily. Hence our "special senses." The manner in which the equilibrium of the nerve-substance is disturbed in each doubtless differs much, but it is instructive to note in connexion with the theory of the nerve-impulse just suggested that the wave-motion of light seems first to induce recognisable chemical changes in material of unknown nature.

The application of these new conceptions to disease we must postpone to another occasion.

[17] Schiefferdecker: Archiv für Mikroskopische Anatomie, Band xxx., 1887.

[18] In connexion with the fact that molecular differences between substances apparently the same even when examined with the utmost minuteness may be revealed by staining the facts of the colour photography of Cassagne may be noted. The waves of light which differ only in rapidity and length but by this excite different elements of the retina reduce a special silver salt in the gelatin film in different degree. Extremely slight as must be the resulting difference in the molecules which is produced it apparently suffices, augmented by some additional chemical process, to make each of them retain some stains and not others.

[19] This view has been developed at length in the writer's "Dynamics of Life" (London: Churchill, 1894), but was clearly stated by Herbert Spencer, "Elements of Biology," vol. i., 1864.

ROYAL PORTSMOUTH HOSPITAL.—The Hospital Saturday Fund collection in Portsmouth and district for the year 1898 was larger than for any previous year. It amounted to £1169.

INFLUENCE OF THE MILK SUPPLY ON THE SPREAD OF TUBERCULOSIS,

BASED UPON AN INVESTIGATION OF SIXTEEN MILK SUPPLIES IN CAMBRIDGE.

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1. *Introduction.*—Last April Professor Kanthack suggested as a subject for research the study of the effect upon the spread of tuberculosis produced by the various milk supplies to the different colleges in Cambridge. He very kindly offered his assistance; it is therefore under his guidance and with his help and advice that the following record of results has been compiled. This paper is limited to a narrative of our joint work—the investigation of the tuberculous lesions and the presence of the tubercle bacillus found in guinea-pigs as the result of inoculation of milk, no notice being taken of other points of interest outside the immediate subject; this is due to the fact that the present article (though complete in itself) is only a preliminary paper. We are now carrying out a further and exhaustive investigation on the milk supplies in Cambridge leading, we hope, to the possibility in the near future of buying milk which comes from cows certified to be free from tuberculosis. Experience and observation have convinced us that infantile tuberculosis is by no means uncommon in Cambridge; and since the danger now generally recognised abroad of spreading tuberculosis by milk is gradually being appreciated in this country all that is needed is to rouse people at home to the consciousness of this danger and make them understand that it is their duty to insist on being supplied with milk free from tuberculous infective material. Similar investigations have been made in other parts of the world and they are already bearing fruit. We may thus mention the work of Professor Bang of Copenhagen, of Professor Delépine in Manchester, and the well-known researches of the Royal Commission. Professor Delépine's work has already induced Lord Vernon to follow the example set by the Danes and Germans—namely, to stamp out tuberculosis in his own herds. We hope that once the colleges have recognised the true state of affairs they will insist on obtaining a pure milk supply and will assist the dairymen in bringing about improved conditions. The manner in which this may be done will be discussed in the fuller report which unfortunately has been delayed by Professor Kanthack's illness. The object of this paper is to set forth the evidence upon which the fuller report is mainly based. To collect such evidence is a matter of some difficulty and at any rate requires a considerable amount of time and labour. It may be noted that Professor Kanthack saw every animal which was dissected and in every instance the diagnosis was accepted and confirmed by him before it was placed on the records.

2. *Method of work.*—Early in May arrangements were made as regards collection of the milk and a regular supply of healthy guinea-pigs. During the first three days only 12 guinea-pigs were inoculated, 4 each day; afterwards, when a routine method had been devised, the number was increased to 6 each day, and this number was adhered to throughout the remainder of the work. It was decided to inoculate 2 guinea-pigs with each sample of milk and to continue this for two successive days, using fresh guinea-pigs each day, so that each separate supply was thus passed through 6 guinea-pigs; the only exception to this arrangement was H.'s supply, which was inoculated into 4 guinea-pigs owing to forgetfulness on the part of one of the college porters to have the bottle left with him filled with milk. It was found more convenient to use the morning delivery of milk in place of that obtained in the afternoon owing to the work sometimes occupying much time. Thus, although more time was lost between collection and inoculation, still by putting off the staining of any cover-glass preparations until after all the inoculations had been made this loss of time was inconsiderable. Some of the samples of milk were collected as early as 6 A.M. and as it was impossible to start work before 9 A.M. some time elapsed before the inoculations could be made, the greatest difference between the time of collection and inoculation being four hours and the smallest being fifteen minutes; an average taken of all the experiments shows the difference to be just under two hours. This, however, is immaterial since we are here dealing with the tubercle bacillus only.

3. *Method of collection of the milk.*—(*a*) A glass-stoppered bottle, having been well washed, done up in paper, and tied with string, was placed in the steriliser and sterilised half an hour at a temperature of 115° C. (*b*) The bottle when cold was usually taken to a college (the permission of the college authorities having been previously obtained) and left with the porter or at the kitchen some hours before the particular milkman arrived. (*c*) In the presence of the milkman the bottle was opened and then filled by the milkman direct from his can; it was immediately shut again, done up in paper, and tied with string; the milkman's name was then written on the paper covering the bottle. Thus the milk, as it was received for examination at the Pathological Laboratory, was in exactly the same condition as that in which it was while in the milkman's can, the only difference being in respect of the time lapsing between collection and examination. The milk was of course "mixed"—i.e., derived from different cows. Later, it is intended to examine the milk from individual cows in order to gain an idea as to how many cows proportionately are tuberculous. Here we are dealing with the question of the milk-supply generally and it is our intention to go no further in this paper than the investigation of the "mixed" milk of each supplier.

4. *Method of inoculation.*—Previously to all inoculations all instruments and vessels had been sterilised by heat and after each operation were at once placed in strong lysol solution, so that it was quite impossible that these could be held liable for any accidental infection with tubercle bacilli. A fresh syringe and needle, both carefully sterilised, were also employed for each separate sample of milk. With the exception of two cases each inoculation was made into the right groin of a guinea-pig. Two glass tubes of a Metzger centrifugal machine were filled up to the 10 c.c. mark with milk taken from each sample, these were then centrifugalised for five minutes, the time being always accurately kept by reference to a clock placed just over the centrifugalising machine. This machine was usually worked at the rate of from 3000 to 4000 revolutions per minute. The average yield of cream from 10 c.c. of milk after centrifugalisation was found to be 0·93 c.c. Later in this paper it is stated that 3 c.c. of the "creamy layer" were inoculated—that is to say, as much cream as possible was collected from each of the two glass tubes, the remainder being made up of the milk floating next to the cream. The "sediment" refers to the deposit found at the bottom of the glass tube; to this part all solid particles should have been driven, but as will be noticed later this does not apply to all the tubercle bacilli when present in milk—some remain in the sediment, but a considerable number are carried up and remain in the creamy layers. Two guinea-pigs were then inoculated, one with the creamy layer, another with the milk at the bottom of the glass tube.

The following is an example of the method employed for each sample of milk, being taken from notes recording the inoculations of the 67th and 68th guinea-pigs: 1. Time of reception of milk from dairyman, 4 P.M. 2. Time of centrifugalisation (two tubes each containing 10 c.c.) 4.30 P.M. 3. Yield of cream after centrifugalisation from one tube, 0·25 c.c. 4. (*a*) 3 c.c. of creamy layer (taken from the two tubes) were inoculated into the right groin of one guinea-pig. (Label L, 67 a.) Rough haired, fawn and white. (*b*) 3 c.c. of sediment were inoculated into the right groin of another guinea-pig. (Label L, 68 b.) Black and fawn. 5. Cover-glass preparations were then made from the sediment which, after allowing sufficient time for drying in the air, were stained by carbolised fuchsin and counter-stained by methylene blue in the usual way in order to differentiate the tubercle bacillus from other bacilli.

On examination with the aid of a $\frac{1}{12}$ oil immersion the results were: (*a*) cocci and diplococci, but only few in number; and (*b*) tubercle bacilli (two present in one preparation). The amount inoculated, ranging from 1·5 c.c. to 3 c.c., was determined in accordance with the size of the guinea-pig; if of large size then 3 c.c. were used. An average of all

the quantities inoculated gives this result: 2·4 c.c. for the creamy layer, 2·1 c.c. for the sediment. In the guinea-pigs that died from tuberculosis the average amount inoculated was 2·28 for the creamy layer and 2·07 for the sediment.

5. *Method of keeping animals under observation.*—For the first three days all the guinea-pigs inoculated on those days were kept in one cage, having celluloid labels fastened by lead wire round their necks (a contrivance which Dr. L. Cobbett very kindly suggested). Besides this means of recognition a detailed account of the colours and peculiarities of the guinea-pig was made in case the labels should chance to get lost. When the cages contained 18 guinea-pigs each group of 6—i.e., each group of animals belonging to each dairy—was picked out and placed in a separate cage, the labels being afterwards removed, and this method was adhered to to the end of the investigation. The guinea-pigs were kept in the country under the best possible conditions and were examined twice a week. After having been under observation for several weeks, when any showed marked enlargement of the inguinal glands, these were killed by ether or chloroform.

6. *Method of examining the guinea-pigs.*—Each guinea-pig after death was carefully opened and examined for any signs of tuberculosis. If any signs of tuberculosis were present they were noted and a general description written down. Cover-glass preparations were at once made, the part to be stained being taken from an abscess or a nodule in the spleen or a caseous lymphatic gland; these were stained for tubercle bacilli in warm carbol fuchsin, passed rapidly through HCl (1 in 4) decolourised in 70 per cent. of methylated spirit and counted-stained with methylene blue. Parts of the spleen, liver, lungs, and glands were then bottled in Müller's fluid, a label being placed on the bottle. When hardened sufficiently small portions were removed and embedded in paraffin. Four sets of sections were stained, two with hæmatein and eosin, and two others (as above) for tubercle bacilli. In many cases several sets had to be cut and stained before positive results could be obtained. This is important because it is known that in milk and especially in butter pseudo-tubercle bacilli may occur which in the guinea-pigs produce lesions macroscopically resembling tubercle, but microscopically differing from the true tubercle, in that the histological elements of tubercle are absent. Cultures were not made from the various organs, since this is very laborious, difficult, and uncertain; and the other tests taken altogether were sufficient to establish a correct diagnosis. By microscopic examination out of the 33 guinea-pigs suspected of having contracted tuberculosis 10 were found to be not affected with tuberculosis, 23 showed typical histological tuberculous lesions, whilst in 16 of the 23 the tubercle bacillus was plainly demonstrated.

Following the example of those who made experiments upon guinea-pigs for the Royal Commission on Tuberculosis and discarded from their results all guinea-pigs which died within twenty-one days of inoculation we have deducted 4 guinea-pigs from the total number inoculated; these died as follows: (*a*) one on the first day after inoculation; (*b*) one on the second day after inoculation; (*c*) one on the third day after inoculation; and (*d*) one on the fifth day after inoculation. Three out of the four belong to groups in which two or more eventually became affected with tuberculosis due to inoculation of milk, thus (*a*) belonged to a group in which 2 out of 6 died from tuberculosis; (*b*) belonged to a group in which 2 out of 6 died from tuberculosis; and (*d*) belonged to a group in which 4 out of 6 died from tuberculosis. It is reasonable to suppose that had they lived one or more of these guinea-pigs might have come under the heading of those that died from tuberculosis.

It has been found necessary to deduct a whole group—namely, K. It was noticed at the time of inoculation that K bore the name of the same dairy as C, and, later, post-mortem examinations and the construction of the tables of results disclosed the fact that two guinea-pigs, one from C and one from K, showed similar internal lesions. This led to an inquiry being made as regards the dairy, when it was found that the same milkman supplied the two colleges. Therefore out of the 100 guinea-pigs originally inoculated the following have been deducted: (*a*) four that died within twenty-one days of inoculation; and (*b*) six that belonged to group K, which subsequently was found to be the same as C.

Results.—1. Of the 90 guinea-pigs inoculated 23 died from tuberculosis giving a percentage of 25·55. Of these 23 guinea-pigs, 13 were inoculated with the creamy layer and 10 with the sediment. 2. Of the 16 dairies examined the milk of 9 caused tuberculosis—i.e., the milk-supply of more than half of them was tainted and capable of spreading tuberculosis. These results may be given in tabular form.

Dairy.	Number of guinea-pigs infected with tubercle as the result of inoculation with—		Evidence of tubercle bacilli in the milk.
	Creamy layer.	Sediment.	
A	None	None	–
B	1 out of 3	1 out of 3	+
C	None	None	–
D	2 out of 3	3 out of 3	+
E	None	None	–
F	1 out of 3	1 out of 3	+
G	1 out of 3	None	+
H	1 out of 2	1 out of 2	+
I	None	None	–
J	None	None	–
L	1 out of 3	2 out of 3	+
M	None	None	–
N	2 out of 3	2 out of 3	+
O	None	None	–
P	3 out of 3	None	+
Q	1 out of 3	None	+

It is thus evident that more than half of the 16 dairies examined now supplying ten of the colleges send out milk containing tubercle bacilli in sufficient quantities to cause tuberculosis in guinea-pigs when these animals have been subjected to inoculation; it is therefore not unreasonable to regard these dairies as a source of grave danger. Again, these dairies supply not only colleges but the town as well; here the danger is much more marked as regards: (*a*) hand-fed infants; (*b*) young children; (*c*) delicate people; and (*d*) all people suffering from acute diseases. In these cases a milk diet is often considered necessary, in some it is the sole diet. Some of these people cannot drink boiled milk and therefore it is most important that they should not use milk containing tubercle bacilli. Whilst some authorities consider tuberculosis to arise solely from inhaled tubercle bacilli, it is probable that a very much larger number of human beings, and certainly of infants, contract that disease by drinking milk containing living tubercle bacilli.

Now it may be argued that almost half the dairies of Cambridge supply milk free from tubercle bacilli. Such argument would be extremely unsafe, for (*a*) before we can speak favourably of a dairy we should have to examine every animal separately; and (*b*) a dairy which three successive days sends out milk free from tubercle bacilli a few days later may issue milk containing these bacilli. The fact that more than half the dairies examined sell milk containing living tubercle bacilli shows how serious the matter is at the present time. Therefore if we are asked how to avoid all danger of infection we answer—(*a*) under existing conditions nothing but boiled or carefully sterilised milk should be consumed; and (*b*) cream, unless obtained after boiling or scalding, should not be given to infants or delicate persons. Ideal conditions demand that we should not rest content with anything short of the certainty that no milk is offered for sale except that obtained from cows known to be free from tuberculosis. We must in fact aim at introducing the system which Professor Bang has so successfully carried out in Denmark; at any rate, it is our duty to protect those who cannot protect themselves.

The accompanying tables give the symbol for each dairy, the number of the experiment, and the quantity of cream or sediment inoculated; they show whether the guinea-pig died or was killed and how many days occurred between inoculation and death. The macroscopic and microscopic examinations are found in columns i. to xvi. The remarks at the foot of the tables, containing the combined results of macroscopic and microscopic examinations, give the details

TABLE OF RESULTS OF EXPERIMENTS SHOWING THE INFLUENCE OF THE MILK-SUPPLY ON THE SPREAD OF TUBERCULOSIS.

Milk-supply.	Number of experiment.	Amount in c.c. inoculated.		Number in days that death took place after inoculation.		Post-mortem Examinations. (α) Macroscopic.											(β) Microscopic.					Reference number.*
		Creamy layer.	Sediment.	Killed.	Died.	I. Seat of inoculation.	II. Right inguinal glands.	III. Right lumbar glands.	IV. Abdominal glands.	V. Cœliac glands.	VI. Bronchial glands.	VII. Right axillary glands.	VIII. Glands on left side of body.	IX. Spleen.	X. Liver.	XI. Lungs.	XII. Cover-glass preparations.	XIII. Glands.	XIV. Spleen.	XV. Liver.	XVI. Lungs.	
A	1	3	—	105	—	*Nil*	Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal	*Nil*	Normal	Normal	Normal	Normal	—
A	2	—	3	105	—	,,	,,	,,	,,	,,	,,	,,	,,	,,	,,	,,	,,	,,	,,	,,	,,	—
A	3	2·5	—	104	—	,,	,,	,,	,,	,,	,,	,,	,,	,,	,,	,,	,,	,,	,,	,,	,,	—
A	4	—	2	104	—	,,	,,	,,	,,	,,	,,	,,	,,	,,	,,	,,	,,	,,	,,	,,	,,	—
A	5	2	—	—	82	,,	Slightly enlarged	,,	,,	,,	,,	Slightly enlarged	,,	?	?	?	,,	,,	,,	,,	,,	—
A	6	—	2	103	—	,,	Normal	,,	,,	,,	,,	Normal	,,	Normal	Normal	Normal	,,	,,	,,	,,	,,	—
B	7	3	—	98	—	*Nil*	Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal	*Nil*	Normal	Normal	Normal	Normal	—
B	8	—	2·5	98	—	,,	,,	,,	,,	,,	,,	,,	,,	,,	,,	,,	,,	,,	,,	,,	,,	—
B	9	2·5	—	—	42	,,	,,	,,	,,	,,	,,	,,	,,	?	?	?	,,	Tubercle	Tubercle	Tubercle	,,	1
B	10	—	3	96	—	,,	Tubercle	Tubercle	,,	Tubercle	Tubercle	,,	,,	Tubercle	?	?	,,	,,	,,	Normal	Inflammatory areas	2
B	11	2·5	—	96	—	,,	Normal	Normal	,,	Normal	Normal	,,	,,	Normal	Normal	Normal	,,	Normal	Normal	,,	Normal	—
B	12	—	3	—	76	,,	,,	,,	,,	,,	,,	,,	,,	,,	,,	,,	,,	,,	,,	,,	,,	—
C	13	3	—	105	—	Abscess	Slightly enlarged	Slightly enlarged	Normal	Normal	Normal	Greatly enlarged	Normal	Normal	Normal	Normal	Cocci present	Normal	Normal	Normal	Normal	—
C	14	—	3	105	—	*Nil*	Normal	Normal	,,	,,	,,	Normal	,,	,,	,,	,,	*Nil*	,,	,,	,,	,,	—
C	15	2	—	104	—	,,	,,	,,	,,	,,	,,	,,	,,	,,	,,	,,	,,	,,	,,	,,	,,	—
C	16	—	2	104	—	,,	,,	,,	,,	,,	,,	,,	,,	,,	,,	,,	,,	,,	,,	,,	,,	—
C	17	2	—	103	—	,,	,,	,,	,,	,,	,,	,,	,,	,,	,,	,,	,,	,,	,,	,,	,,	—
C	18	—	2·5	103	—	,,	,,	,,	,,	,,	,,	,,	,,	,,	,,	,,	,,	,,	,,	,,	,,	—
D	19	3	—	65	—	Tubercle	Tubercle	Tubercle	Tubercle	Tubercle	Tubercle	Normal	Normal	Tubercle	Tubercle	Tubercle	T. B. present	Tubercle	Tubercle	Tubercle	Tubercle	3
D	20	—	2	—	80	,,	,,	,,	,,	,,	,,	,,	,,	,,	,,	?	*Nil*	,,	Not examined	,,	Not examined	4
D	21	3	—	—	56	*Nil*	Normal	Normal	Normal	Normal	Normal	,,	,,	Normal	Normal	Normal	,,	Normal	Normal	Normal	Normal	—
D	22	—	3	66	—	Tubercle	Tubercle	Tubercle	Tubercle	Tubercle	Tubercle	Enlarged	,,	Tubercle	Tubercle	?	T. B. present	Not examined	Tubercle	Tubercle	Tubercle	5
D	23	1·5	—	65	—	,,	,,	,,	,,	,,	,,	Normal	,,	,,	,,	?	,,	Tubercle	,,	,,	Not examined	6
D	24	—	2·5	87	—	,,	,,	,,	,,	,,	,,	,,	,,	,,	,,	?	,,	,,	Museum specimen			7
E	25	2	—	107	—	*Nil*	Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal	*Nil*	Normal	Normal	Normal	Normal	—
E	26	—	3	—	80	,,	Slightly enlarged	,,	,,	,,	,,	,,	,,	,,	,,	,,	,,	,,	,,	,,	,,	—
E	27	3	—	—	3	Tense swelling	,,	,,	,,	,,	,,	,,	,,	,,	,,	,,	,,	,,	,,	,,	,,	—
E	28	—	3	108	—	*Nil*	Normal	,,	,,	,,	,,	,,	,,	,,	,,	,,	,,	,,	,,	,,	,,	—
E	29	1·5	—	105	—	,,	Slightly enlarged	Slightly enlarged	,,	,,	,,	,,	,,	?	Yellowish granules	,,	,,	,,	,,	,,	,,	—
E	30	—	2·5	105	—	,,	Normal	Normal	,,	,,	,,	,,	,,	Normal	Normal	,,	,,	,,	,,	,,	,,	—
F	31	2·5	—	105	—	*Nil*	Tubercle	Tubercle	Normal	Normal	Normal	Normal	Normal	Tubercle	?	?	*Nil*	Tubercle	Tubercle	Not examined	Inflammatory areas	8
F	32	—	2·5	105	—	,,	Normal	Normal	,,	,,	,,	,,	,,	Normal	Normal	Normal		Normal	Normal	Normal	Normal	
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23

E	30	—	2·5	105	—	,,	Normal	Normal	,,	,,	,,	,,	,,	Normal	Normal	,,	,,	,,	,,	,,	,,	,,	6.
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	

F	31	2·5	—	105	—	*Nil*	Tubercle	Tubercle	Normal	Normal	Normal	Normal	Normal	Tubercle	?	?	*Nil*	Tubercle	Tubercle	Not examined	Inflammatory areas	8	
F	32	—	2·5	105	—	,,	Normal	Normal	,,	,,	,,	,,	,,	Normal	Normal	Normal	,,	Normal	Normal	Normal	Normal	—	
F	33	2·5	—	—	2	Tense swelling	,,	,,	,,	,,	,,	,,	,,	,,	,,	,,	,,	,,	,,	,,	,,	—	
F	34	—	1·5	104	—	*Nil*	,,	,,	,,	,,	,,	,,	,,	,,	,,	,,	,,	,,	,,	,,	,,	—	
F	35	3	—	—	1	Tense swelling	,,	,,	,,	,,	,,	,,	,,	,,	,,	,,	,,	,,	,,	,,	,,	—	
F	36	—	2	103	—	*Nil*	Tubercle	,,	Tubercle	,,	,,	,,	,,	Tubercle	,,	,,	,,	Tubercle	Tubercle	,,	Inflammatory areas	9	
G	37	3	—	108	—	*Nil*	Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal	*Nil*	Normal	Normal	Normal	Normal	—	
G	38	—	1·5	108	—	,,	,,	,,	,,	,,	,,	,,	,,	,,	,,	,,	,,	,,	,,	,,	,,	—	
G	39	2·5	—	106	—	,,	,,	,,	,,	,,	,,	,,	,,	,,	Tubercle	?	,,	Not examined	,,	Tubercle	Inflammatory areas	10	
G	40	—	1·5	106	—	,,	,,	,,	,,	,,	,,	,,	,,	,,	Normal	Normal	,,	Normal	,,	Normal	Normal	—	
G	41	3	—	106	—	,,	,,	,,	,,	,,	,,	,,	,,	,,	,,	,,	,,	,,	,,	,,	,,	—	
G	42	—	2	—	59	,,	,,	,,	,,	,,	,,	,,	,,	,,	,,	,,	,,	,,	,,	,,	,,	—	
H	43	3	—	—	34	*Nil*	Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal	*Nil*	Normal	Normal	Normal	Normal	—	
H	44	—	2	102	—	Old sinus	Tubercle	Tubercle	Tubercle	,,	Tubercle	,,	,,	Tubercle	Tubercle	?	T. B. present	Tubercle	Tubercle	Tubercle	Tubercle	11	
H	45	3	—	61	—	Tubercle	,,	,,	,,	Tubercle	,,	?	,,	,,	,,	Normal	,,	,,	Not examined	,,	Normal	12	
H	46	—	1·5	101	—	*Nil*	Normal	Normal	Normal	Normal	Normal	Normal	,,	Normal	Normal	,,	*Nil*	Normal	Normal	Normal	,,	—	
I	47	2·5	—	—	103	*Nil*	Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal	*Nil*	Normal	Normal	Normal	Normal	—	
I	48	—	1·5	107	—	,,	,,	,,	,,	,,	,,	,,	,,	,,	,,	,,	,,	,,	,,	,,	,,	—	
I	49	3	—	106	—	,,	,,	,,	,,	,,	,,	,,	,,	,,	,,	,,	,,	,,	,,	,,	,,	—	
I	50	—	2·5	106	—	,,	,,	,,	,,	,,	,,	,,	,,	,,	,,	,,	,,	,,	,,	,,	,,	—	
I	51	2	—	—	103	,,	,,	,,	,,	,,	,,	,,	,,	,,	,,	,,	,,	,,	,,	,,	,,	—	
I	52	—	2	—	87	,,	,,	,,	,,	,,	,,	,,	,,	,,	,,	,,	,,	,,	,,	,,	,,	—	
J	53	2	—	108	—	*Nil*	Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal	*Nil*	Normal	Normal	Normal	Normal	—	
J	54	—	2·5	—	103	,,	,,	,,	,,	,,	,,	,,	,,	,,	,,	,,	,,	,,	,,	,,	,,	—	
J	55	2·5	—	—	101	,,	,,	,,	,,	,,	,,	,,	,,	,,	,,	,,	,,	,,	,,	,,	,,	—	
J	56	—	3	108	—	,,	,,	,,	,,	,,	,,	,,	,,	,,	,,	,,	,,	,,	,,	,,	,,	—	
J	57	2	—	—	66	,,	,,	,,	,,	,,	,,	,,	,,	,,	,,	,,	,,	,,	,,	,,	,,	—	
J	58	—	2	107	—	,,	,,	,,	,,	,,	,,	,,	,,	,,	,,	,,	,,	,,	,,	,,	,,	—	
L	65	2·5	—	113	—	*Nil*	Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal	*Nil*	Normal	Normal	Normal	Normal	—	
L	66	—	2·5	113	—	,,	,,	,,	,,	,,	,,	,,	,,	,,	,,	,,	,,	,,	,,	,,	,,	—	
L	67	3	—	—	29	,,	,,	,,	,,	,,	,,	,,	,,	,,	,,	,,	,,	,,	,,	,,	,,	—	
L	68	—	3	—	80	Tubercle	Tubercle	Tubercle	Tubercle	Tubercle	Tubercle	,,	Tubercle	Tubercle	Tubercle	,,	T. B. present	Tubercle	Tubercle	Tubercle	,,	13	
L	69	2	—	111	—	,,	,,	,,	,,	,,	,,	,,	Normal	,,	,,	Tubercle	Spoilt	,,	Museum specimen.			14	
L	70	—	1·5	—	77	,,	,,	,,	,,	,,	,,	Tubercle	,,	,,	,,	,,	T. B. present	,,	Tubercle	Not examined	,,	15	

REMARKS.

***Milk-supply A.*—No. 5: Very emaciated.**

***Milk-supply B.*—No. 9: Examined by an assistant who might have overlooked any small but enlarged glands.**

***Milk-supply C.*—No. 13: Lymphatic vessels extend from seat of inoculation to axillary glands, then on to an enlarged sub-maxillary gland.**

***Milk-supply D.*—No. 19: Tubercle bacilli present in XII., XIV., and XV. No. 20: Tubercle bacilli in XV. No. 22: Tubercle bacillus found in XII., XIV., and XV. No. 23: Tubercle bacillus found in XII. and XIV. No. 24: A museum specimen so no organs were cut. Tubercle bacillus found in XII.**

***Milk-supply E.*—No. 26: Spleen adherent to diaphragm in connexion with a growth on a rib.**

***Milk-supply G.*—No. 42: Infarct at base of right lung.**

***Milk-supply H.*—No. 44: Tubercle bacillus found in milk previously to inoculation; also in XII. and XIII. No. 45: Tubercle bacillus present in XII. and XV. Only four guinea-pigs were inoculated with milk from supply H.**

***Milk-supply L.*—No. 68: Tubercle bacillus present in milk previously to inoculation, and in XII. and XIII. Maxillary cervical and axillary on left side affected. *Vide* bottle 13*a*. No. 69: Museum specimen. No. 70: Tubercle bacillus in XII. and XIII. *Vide* gland 15*a*.**

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TABLE OF RESULTS OF EXPERIMENTS SHOWING THE INFLUENCE OF THE MILK-SUPPLY ON THE SPREAD OF TUBERCULOSIS (*Continued*).

Milk-supply.	Number of experiments.	Amount in c.c. inoculated.		Number in days that death took place after inoculation.		Post-mortem Examinations. (α) Macroscopic.											(β) Microscopic.					Reference number.*
		Creamy layer.	Sediment.	Killed.	Died.	I. Seat of inoculation.	II. Right inguinal glands.	III. Right lumbar glands.	IV. Abdominal glands.	V. Coeliac glands.	VI. Bronchial glands.	VII. Right axillary glands.	VIII. Glands on left side of body.	IX. Spleen.	X. Liver.	XI. Lungs.	XII. Cover-glass preparations.	XIII. Glands.	XIV. Spleen.	XV. Liver.	XVI. Lungs.	
M	71	2·5	—	114	—	*Nil*	Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal	*Nil*	Normal	Normal	Normal	Normal	—
M	72	—	1·5	114	—	,,	,,	,,	,,	,,	,,	,,	,,	,,	,,	,,	,,	,,	,,	,,	,,	—
M	73	3	—	113	—	,,	,,	,,	,,	,,	,,	,,	,,	,,	,,	,,	,,	,,	,,	,,	,,	—
M	74	—	2·5	113	—	,,	,,	,,	,,	,,	,,	,,	,,	,,	,,	,,	,,	,,	,,	,,	,,	—
M	75	2	—	112	—	,,	,,	,,	,,	,,	,,	,,	,,	,,	,,	,,	,,	,,	,,	,,	,,	—
M	76	—	2	112	—	,,	,,	,,	,,	,,	,,	,,	,,	,,	,,	,,	,,	,,	,,	,,	,,	—
N	77	2·5	—	—	5	*Nil*	Normal	Normal	Normal	Normal	Normal	Normal	Normal	Nodules	Normal	Normal	*Nil*	Normal	Tubercle	Normal	Normal	—
N	78	—	2	116	—	,,	,,	,,	,,	,,	,,	,,	,,	,,	,,	,,	,,	,,	Normal	,,	,,	—
N	79	2·5	—	66	—	Tubercle	Tubercle	Tubercle	Tubercle	Tubercle	Tubercle	?	,,	Tubercle	Tubercle	Tubercle	T. B. present	Tubercle	Tubercle	Tubercle	Tubercle	16
N	80	—	1·5	115	—	,,	,,	,,	,,	,,	,,	Normal	,,	,,	,,	,,	,,	Museum specimen				17
N	81	2·5	—	114	—	*Nil*	,,	Normal	,,	Normal	Normal	,,	,,	,,	,,	,,	*Nil*	Tubercle	Tubercle	Tubercle	Tubercle	18
N	82	—	2	65	—	Tubercle	,,	Tubercle	,,	Tubercle	,,	,,	,,	,,	,,	,,	T. B. present	,,	,,	,,	,,	19
O	83	2	—	105	—	*Nil*	Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal	*Nil*	Normal	Normal	Normal	Normal	—
O	84	—	2	110	—	,,	,,	,,	,,	,,	,,	,,	,,	,,	,,	,,	,,	,,	,,	,,	,,	—
O	85	2	—	104	—	,,	,,	,,	,,	,,	,,	,,	,,	,,	,,	,,	,,	,,	,,	,,	,,	—
O	86	—	2	134	—	,,	,,	,,	,,	,,	,,	,,	,,	,,	,,	,,	,,	,,	,,	,,	,,	—
O	87	3	—	133	—	,,	,,	,,	,,	,,	,,	,,	,,	,,	,,	,,	,,	,,	,,	,,	,,	—
O	88	—	1·5	102	—	,,	,,	,,	,,	,,	,,	,,	,,	,,	,,	,,	,,	,,	,,	,,	,,	—
P	89	2	—	108	—	*Nil*	Tubercle	Normal	Normal	Tubercle	Normal	Normal	Normal	?	Tubercle	?	T. B. present	Not examined	Tubercle	Tubercle	?	20
P	90	—	1	108	—	,,	Normal	,,	,,	Normal	,,	,,	,,	Normal	Normal	Normal	*Nil*	Normal	Normal	Normal	Normal	—
P	91	2	—	134	—	,,	Tubercle	Tubercle	Tubercle	Tubercle	,,	,,	,,	Tubercle	?	,,	T. B. present	Tubercle	Tubercle	,,	,, ●	21
P	92	—	2	107	—	,,	Normal	Normal	Normal	Normal	,,	,,	,,	Normal	Normal	,,	*Nil*	Normal	Normal	,,	,,	—
P	93	2	—	106	—	,,	Tubercle	,,	Tubercle	Tubercle	,,	,,	,,	Tubercle	Tubercle	Tubercle	T. B. present	Tubercle	Tubercle	Tubercle	Inflammatory areas	22
P	94	—	1·5	106	—	,,	Normal	,,	Normal	Normal	,,	,,	,,	Normal	Normal	Normal	*Nil*	Normal	Normal	Normal	Normal	—
Q	95	2	—	103	—	Tubercle	Tubercle	Tubercle	Tubercle	Tubercle	Tubercle	?	Normal	Tubercle	Tubercle	Tubercle	T. B. present	Not examined	Tubercle	Tubercle	Tubercle	23
Q	96	—	2	127	—	*Nil*	Normal	Normal	Normal	Normal	Normal	Normal	,,	Normal	Normal	Normal	*Nil*	Normal	Normal	Normal	Normal	—
Q	97	2	—	102	—	,,	,,	,,	,,	,,	,,	,,	,,	,,	,,	,,	,,	,,	,,	,,	,,	—
Q	98	—	2	102	—	,,	,,	,,	,,	,,	,,	,,	,,	,,	,,	,,	,,	,,	,,	,,	,,	—
Q	99	2	—	101	—	,,	,,	,,	,,	,,	,,	,,	,,	,,	,,	,,	,,	,,	,,	,,	,,	—
Q	100	—	2	127	—	,,	,,	,,	,,	,,	,,	,,	,,	,,	,,	,,	,,	,,	,,	,,	,,	—

REMARKS.

Milk-supply N.—No. 79: Tubercle bacillus present in XII., XIV., and XV. No. 80: Museum specimen. Inoculated in left groin. ∴ for right read left and *vice versâ*. No. 82: Tubercle bacillus present in XII. and XIII.

Milk-supply P.—No. 89: Tubercle bacillus present in XII. No. 91: Tubercle bacillus present in milk which was inoculated, also in XIV. No. 93: Tubercle bacillus present in XII.

Milk-supply Q.—No. 95: Tubercle bacillus present in XII.

* Guinea-pigs held to be affected with tuberculosis: combined results of macroscopic and microscopic examinations.

of guinea-pigs which were found to be affected by tuberculosis.

[We have left this paper as it reached us, and it will be seen that it was written before the lamented deaths of Professor Kanthack and Lord Vernon. Professor Kanthack, realising that the "fuller report" alluded to would never be written, expressed a wish on Dec. 15th last that the results of the investigation up to date should be published in the joint names of Dr. Sladen and himself.—ED. L.]

NEUROLOGICAL FRAGMENTS.

BY J. HUGHLINGS JACKSON, M.D. ST. AND., F.R.S.,
CONSULTING PHYSICIAN TO THE LONDON HOSPITAL AND PHYSICIAN TO THE HOSPITAL FOR THE PARALYSED AND EPILEPTIC.

(*Continued from* THE LANCET *of Jan. 2nd, 1897.*)

No. XVIII.

ON ASPHYXIA IN SLIGHT EPILEPTIC PAROXYSMS.—ON THE SYMPTOMATOLOGY OF SLIGHT EPILEPTIC FITS SUPPOSED TO DEPEND ON DISCHARGE-LESIONS OF THE UNCINATE GYRUS.

IN severe fits of epilepsy there is arrest of respiration from spasmodic fixation of the chest and perhaps there is spasm of the diaphragm also. In some slight epileptic attacks, *les petits maux*, the patient "turns blue" or "purple"; he may become livid, a "dark pale," to use the expression of the friend of a patient of mine. I have until recently thought that asphyxia in slight fits is owing to spasmodic fixation of the chest and have indeed supposed that some slight fits with asphyxia and without true convulsion of the arms were respiratory (bulbar) fits owing to discharges beginning in the respiratory centre. Certain researches by Mr. W. G. Spencer ("The Effect Produced upon Respiration by Faradic Excitation of the Cerebrum in the Monkey, Dog, Cat, and Rabbit"),[1] make me think that another explanation of asphyxia in slight epileptic fits or at least in a certain group of them, is more likely. In this note I only refer to that part of Mr. W. G. Spencer's researches which deals with arrest of respiration. On p. 629 *op. cit.* Mr. W. G. Spencer writes: "It has, therefore, been shown that the respiration can be slowed and arrested by excitation of a certain spot and a limited area around it. This spot is situated in all the animals examined to the outer side of the olfactory tract just in front of the junction of the tract with the uncinate. And this arrest can be constantly obtained and the experiment repeated again and again under certain conditions." On p. 628 Mr. W. G. Spencer writes: "The arrest in the monkey was nearly always in expiration, but only rarely was any active expiration seen."[2]

I presume that the arrest is by great cortical inhibition of the respiratory (medulla) centre; a superior centre of the lowest level.[3]

I have several times[4] drawn attention to what I will now call a group of cases of epilepsy—cases in which there is at the onset of the paroxysms a crude sensation of smell or of taste or in which there are movements of chewing, smacking of the lips, and sometimes spitting, &c. These movements are the indirect, the "reflex," consequences of an epileptic discharge of gustatory elements of the cortex. In some cases of this group there is a warning by what is known as the epigastric sensation; this sometimes occurs along with one of the other crude sensations or with the chewing, &c., movements. The representation of smell and taste is, according to Ferrier, in the uncinate gyrus; excitation of this gyrus in the animals he experimented on produces, he found, "reflex" movements analogous to those just mentioned as occurring at the onset of certain slight epileptic fits in the human subject.[5] Different varieties of this group of cases depend, I suppose, on discharge lesions of different parts of the uncinate gyrus or of parts of convolutions in its close neighbourhood. As will have been inferred it is supposed that in this cortical region are the physical bases of some systemic sensations—to speak very roughly of those systemic sensations especially appertaining to the digestive system.

There is very often the Dreamy State in cases of this group of epileptic fits—the Uncinate Group.

I have had very few opportunities of watching patients in slight paroxysms of epilepsy with regard to degrees of asphyxia. In slight attacks of the group of cases just spoken of there is sometimes "turning blue," as the friends may say. Here comes, I submit, the importance of that part of Mr. W. G. Spencer's research which I have quoted; his "arrest centre" is very near to the uncinate gyrus. So that if an epileptic discharge does begin in some part of that gyrus it may spread to and may soon reach the "arrest centre": I say "may spread to and may soon reach" because no doubt the degree of spreading and range attained by an epileptic discharge depends on the initial discharge—on the degree of fulmination of the discharge-lesion (quantity of energy liberated and rate of liberation). I suggest particular inquiry and careful observation regarding degrees of asphyxia in slight paroxysms of the group of cases of epilepsy I am dealing with; the colour of the face (especially of the lips), the state of the chest walls and abdomen, and the attitude of these parts, inspiratory or expiratory. Besides this, I ask a question which is, I think, of great importance: Can a considerable degree of asphyxia occur in a slight fit without spasm, real convulsion, I mean tonic or clonic, of the arms? (I am not meaning that slight and yet true spasm of the hand (fingers) may not be present when the rest of the arm is not convulsed.) It is to be urged that on arrested respiration in slight fits there may be writhing movements of the arms, and no convulsion properly so-called of them. The writhing movements are presumably an indirect consequence of (the physical condition for) suffocation.

The following case will serve to illustrate what I have just said. A man, F. F——, aged fifty-two years, had a "funny feeling" which was not true vertigo; of this feeling he said, "I can't tell what it is." I could not be sure it was the dreamy state; very likely it was not, at least not a definite one as in this patient's case I asked leading questions on the matter. His wife knew when his attacks were coming on by a noise he made; she smacked her lips as if tasting to let me know what the noise was. When this noise stopped the patient (his lips) "turned blue"; his eyes were half closed. His arms dropped *soft*, not *stiff*. When he came round he "*drew a long breath*" and began to breathe easily and then seemed "dazed and muddled" and "asked unlikely questions." In this case there was some kind of abnormal affection of taste *after* the attack; he told me that he had after the attacks a peculiar taste in his mouth, "everything nasty," everything tasted alike; he had complained of this to his wife.

Smacking movements of the lips, nasty taste, dreamy state, if there was one, and "turning blue" may seem at first glance to have no sort of relation to one another. I submit that they have an association in the sense that there is one discharge-lesion of some cells of the uncinate gyrus and that there is spreading of the discharge from this focus. I believe, too, that the dreamy state (which as I have said often occurs in this group of fits although perhaps not in the case of F. F—— just narrated) is a consequence, a very indirect consequence, of a discharge-lesion so seated. On looking up my notes of this case I was much interested in the observation of the patient's wife that in the paroxysms his arms were soft, not stiff; it seems that there was asphyxia without any convulsion of these limbs. I will, however, refer to the case of a boy, ten years of age, recorded by Herpin in his valuable work on Epilepsy published in 1852 (p. 275), with regard to the arms in epileptic asphyxia and to several other matters of importance in the analysis of the symptomatology of epileptic fits.

Herpin says that the boy's parents included under the head of vertigo two varieties (I should use the term degrees) of incomplete fits (slight fits). There is no mention of a dreamy state; it is the kind of case in which I should expect there to be one. The boy had also severe attacks[6] which were always preceded by the incomplete attacks.

"At the beginning of the more severe seizures [the severer of the two degrees of incomplete attacks is meant], which

[1] Transactions of the Royal Society, vol. clxxxv., 1894, B., pp. 609 to 657.

[2] By the latter part of the quotation is meant a degree of expiration in excess of the normal.

[3] THE LANCET, Feb. 23rd, 1895: On Superior and Subordinate Centres of the Lowest Level.

[4] Medical Times and Gazette, vol. i., 1879; Brain, July, 1880; July, 1888; and (with Dr. Beevor) Brain, October, 1889.

[5] I have had under my care a patient who had slight epileptic fits (he had severe attacks too) which began by his making such mouth movements as I have mentioned in the text; no crude sensation of taste was remembered by the patient on coming round from his seizures; there was the dreamy state. In this case Dr. Colman found a very small focus of softening in the left uncinate gyrus.

[6] "Attaques proprement dites."

Milk-supply N.—No. 79: Tubercle bacillus present in XII. No. 91. | Milk-supply P.—No. 93: Tubercle bacillus present in XII. | Milk-supply Q—No. 95: Tubercle bacillus present in XII. XV. No. 80: Museum specimen. Inoculated in left groin. ∴ for right * Guinea-pigs held to be affected with tuberculosis: combined results of macroscopic and microscopic examinations.

happens like the other kind of fits, without any apparent cause, the child experiences a sensation which begins in the abdomen and the stomach and rises up to the neck; he then says, 'I am ill! I am ill!' *Then he starts chewing motions (champing)*[7] *and his mouth fills with water*, in spite of noisy efforts at deglutition. At the same time the contractured hands and forearms are flexed and subject to irregular movements (not tremors or jerks)[8] which tend to carry the open or closed hands towards the head; the face was immobile and distorted, at first pale, then livid or purple (*violette*); the eyes are haggard. Whether seated or standing at the onset of the attack the child does not fall, but is willing to be supported. In the later stage of his malady, happening to have a seizure in the street, he continued walking, at first alone but like a drunken man, afterwards with help. That the child did not fall is not the only sign from which one could conclude that he does not entirely lose consciousness: as saliva runs from his mouth towards the end of the fit, *he seizes a handkerchief which was offered him; and he tries to wipe his lips*, but his arms seemed unable to be under the control of his will.[9] Sometimes during the seizures he repels any service offered him; indeed, one day he even answered a question by a few words. After the convulsive state, which lasts from one to three minutes, he remains quite quiet for a moment and then is well again. Sometimes in the course of the attack there will be efforts at vomiting. To sum up, this variety consists of exclusively tonic convulsions restricted to the upper portion of the body with more or less complete preservation of the senses and intelligence.

"In the less severe variety [of the incomplete attacks] which very nearly resembles simple vertigo, there are general immobility, *champing*,[10] sounds of deglutition, sometimes there is slight lividity of the face, but no convulsion of the limbs."

My reason for citing this case is partly on account of the champing movements (with an epigastric sensation) and also because of Herpin's statement about the arms when the patient was purple—the "irregular" movements, his seizing the handkerchief and his inability to use it. I suggest that in this case the champing movements signified a discharge lesion of gustatory cells of the uncinate gyrus and that the discharge besides spreading to motor centres for those movements spread also to the arrest centre and thus caused, by inhibiting the respiratory (medulla) centre, the patient's face to become livid and purple. I submit that the irregular movements of the arms were, like those of champing, movements proper, vague movements, especially of the accessory muscles of respiration, consequent on a state of suffocation. However, I must not forget that Herpin spoke of them as being part of a tonic convulsion.

In future notes I shall speak of symptoms of the group mentioned in this note with comments and may reconsider the state of the arms in the asphyxia of slight epileptic fits.

SURGERY IN THE GRÆCO-TURKISH WAR.

BY FRANCIS C. ABBOTT, B.Sc., M.S. LOND., F.R.C.S. ENG.,

SURGEON TO OUT-PATIENTS TO THE EVELINA HOSPITAL; LATE CHIEF SURGEON TO THE "DAILY CHRONICLE" NATIONAL FUND FOR GREEK WOUNDED.

THE first part of this paper was in the hands of the Editors of THE LANCET before Christmas, 1897. Prolonged absence from work has delayed its publication; the results in more recent campaigns are therefore not alluded to.

MILITARY SURGERY AT THE PRESENT TIME.

The enormous surgical experience gained in some previous wars, with their vast numbers of men engaged and their long duration, may well make one pause before publishing a comparatively limited series of cases like my own. But war and surgery are changing sciences and in both there have been such great alterations since the last European war as to vitally alter the character of many of the problems with which the military surgeon has to deal. On the one hand the magazine rifle, throwing sheathed bullets of small calibre and high velocity for enormous ranges, has introduced a factor about which little is yet known, but which will certainly change the character of many of the wounds received in battle. It is only necessary to read the interesting chapters in which the most modern English text-book on military surgery[1] discusses the effects produced by the small bore bullet at different ranges and velocities to realise that as yet there is much to be learnt about them.

The chief experimentalists have differed widely in their results, mainly, I think, for two reasons. One is that the effects produced are not the same on the coagulated tissues of a cadaver as on the living, and the other and more important is that in so many experiments the charge has been diminished in place of increasing the range. This certainly obtains the same reduction of energy in the bullet but not the same effect, for some reason, on the tissues. In war where otherwise the experiments would be so perfect the results are vitiated, as a rule, by want of knowledge of the distance from which any particular bullet has been fired and by the fact that in many cases where the tissue damage is greatest the doubt occurs as to whether the bullet has not already struck something and so been altered in its shape before entering the body. In our cases where the bullet had completely traversed the body there was sometimes an additional doubt as to the calibre of the bullet. Some of the Turks were armed with the Mauser and the remainder with the Martini-Henry rifle. Wherever possible this point is noted but in many cases it had to remain uncertain.

On the other or surgical side there has been an equally great improvement in our antiseptic methods, especially perhaps in the way of simplicity and ease of attainment, making their successful application to military surgery not only possible but comparatively certain. In this connexion it was against us that many of the cases had not received any first aid. Some of the wounds were covered with an antiseptic pad, others had been bound up by the men themselves, but many were quite uncovered. On the other hand they had not been tampered with in unfavourable surroundings and they were not brought down in soiled ambulance waggons but all on horse or foot. The atmosphere was pure and the last part of the journey was performed in steamers not previously used for this purpose and which, though dirty, must have been fairly free from pathogenic organisms. The discovery of the Roentgen rays and their use for the detection of hidden bullets has also put a new weapon into the hands of the military surgeon.

THE CONDITIONS AND EQUIPMENT OF THE TWO TEMPORARY HOSPITALS EMPLOYED

My experience was gained in two temporary hospitals in which 153 cases in all were treated to a termination, and of these careful notes were taken. For the treatment adopted I was as far as possible responsible, though owing to the distance which separated the hospitals and heavy administrative duties much of the actual management of cases fell to my colleagues, Dr. H. J. Davis, Mr. R. Fox Symons, Mr. H. Moffat, and Mr. S. Osborn, to whose careful work I am much indebted. To Mr. H. Moffat at the Piræus fell practically the sole charge and initiative in many bad cases and excellent results he obtained. We treated at Chalcis a large number of other bullet-wound cases temporarily, but for want of room passed them on to Athens. These and many others which I saw in the various temporary and permanent hospitals by the courtesy of the Greek and foreign surgeons, no doubt helped to form my opinions.

As military surgery is mainly ordinary surgery under difficulties a word must be said as to surroundings and equipment. Our hospitals were placed in a villa at Phalerum (kindly lent us by Her Majesty the Queen of Greece) and a large one-storeyed pavilion building at Chalcis. Both had been crowded with refugees and were very dirty when we took them over. Disinfection was carried out by burning sulphur, by double lime-washing the walls, and by the employment of much carbolic acid and soap-and-water. We apparently got rid of the microbes but were not so successful with macroscopic foes. The house at Phalerum was connected with the drainage system—a doubtful advantage as we did not know in what way. Chalcis, on the other

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7 "Il se met à mâchiller."

8 "Sans tremblements ni secousses."

9 "Mais ses bras ne semblaient pas obéir régulièrement à sa volonté."

10 "Mâchillement" (this word is the only one italicised in the original except that of the patient's exclamation "J'ai mal"; the other italics are mine)

1 Wounds in War, by Professor Stevenson.

hand, has no sanitary arrangements, and as it had 15,000 refugees quartered on an original 9000 inhabitants disease was very rife. The kitchen and offices were over a large cesspool, luckily connected only with our own building. It was too dangerous to make any great change, so all we could do was to partially close it and have frequent supplies of antiseptics thrown into the remainder which we were obliged to continue to use. Typhoid fever and small-pox were both very prevalent but we had no cases among the staff or patients except those which came down from the front with the former disease. For filtering water we used throughout Berkefeld filters, relying on their efficacy for both surgical and drinking purposes. The form adopted was a hand-pump supported on a stem ending in a stirrup for the foot. The machine could be taken to pieces, was very portable, and it was possible to pump half a gallon of filtered water a minute. I had no means of testing this water bacteriologically, but no case of the fearfully-prevalent typhoid fever arose in either place. I also used this water as sterile in surgery, because from the smallness of the open charcoal stoves it was impossible to boil sufficient, and as far as I know I used it without any bad result.

The hospital near Athens was furnished with beds and other fittings locally bought. The arrangements at Chalcis were more primitive. The beds were planks on trestles and the mattresses, for want of hay or straw, were stuffed with cotton-waste. The rooms, however, were large and airy, the largest ward containing 22, and the smallest 11, beds. Owing to overweight we left behind in England to follow by steamer all such nursing adjuncts as urinals, bed-pans, porringers, &c. I should advise anyone about to undertake similar work to sacrifice almost anything rather than these, as other things can be more easily extemporised, while nothing is more necessary in the treatment of bad cases. The patients in both hospitals were tended by English nurses assisted by Greek orderlies. The *Daily Chronicle* had generously given me a free hand as to equipment and we had a full supply of modern instruments and dressings.

On instruments I have little to say. Nearly all operations are of a cleansing and trimming character and require ordinary tools. We much preferred the new "Egyptian Army Pattern" bullet-forceps to any others. Those with sharp-toothed ends we found both difficult and dangerous to work at the end of a long sinus which with the new bullets is even narrower than formerly. I much prefer a long periosteal elevator with slightly curved end to any forceps whenever possible. All difficult bullets should be cut down on by a fresh incision and the track ignored. There is no hurry about removal and if the sinus is healed asepsis is all the more certain. We had no opportunity of using Murphy's button or other rapid means of intestinal suture, as the two cases of perforation of the gut were neither suitable. All instruments were sterilized by boiling before and after use. The chief dressings were cyanide gauze and Robinson's tissue and the antiseptic perchloride of mercury in tabloids or soloid cartridges for making larger quantities of solution. We of course used a good deal of carbolic acid, but found its bulk, the heat needed, and the time spent in preparing a solution distinct disadvantages. Creolin proved an excellent lotion for cleansing long suppurating bullet sinuses. We did not chance to need saline infusion, but the simple apparatus required should always be at hand, as many of the most favourable cases for its use must occur after hæmorrhage in bullet wounds. We had with us anti-tetanic serum, but no case of tetanus arose. Several cases of the disease occurred during the war but it was not common.

THE ROENTGEN RAYS (WITH MR. R. FOX SYMONS, BY WHOM MOST OF THE SKIAGRAMS WERE TAKEN).

The great field of future usefulness for the x rays in war is obvious; their limitations can only be told by experience. We were fortunate in having with us a powerful coil and all the other essentials for x ray work. This was the only apparatus of the kind in Greece and we therefore received cases from other surgeons to supplement our own and were in the position to gain a larger experience of the use of the rays in bullet wound cases than had yet fallen to other surgeons. The equipment was kindly chosen by Dr. Barry Blacker and furnished by Messrs. Miller and Woods. The only difficulty we had with the battery was the melting of the pitch of the partitions between the cells owing to the heat. The coil gave a nominal 10 in. spark. We only used three Crookes's tubes throughout, but, of course, in such circumstances as ours it is very advisable to have a good reserve. We had a large screen of platino-cyanide of barium which proved the means of saving much time and is probably even more necessary in war than in work elsewhere. The troublesome question of depth is so easily approximately solved by its aid. The only disadvantage is that we have not permanent optical records of all the results.

The chief difficulties in the use of the rays in war as they presented themselves to us were—the great weight of the coil and secondary battery, the absolute necessity of having a source of electric supply near at hand to recharge the batteries, the fragility of Crookes's tubes and glass negatives, the danger of carrying strong sulphuric acid, the difficulty of sparing the space and of making an efficient dark room with good water-supply, and the time taken up by the work. Besides these there is the general delicacy and liability to derangement of the whole apparatus, as every x-ray photographer will understand, which makes the manipulations a great extra anxiety when one is already working at high pressure and short-handed in disadvantageous surroundings. A more amusing source of difficulty was the superstition of the natives. They undoubtedly looked on the whole affair as the work of ὁ Διαβολος. It made it difficult to take a skiagram when the subject was constantly crossing himself unless strictly watched. Some of these difficulties quoted above absolutely preclude the use of such an apparatus at the actual front. It would of course be possible to work with a less powerful coil and battery than we used, but such small machines will only give results with easy cases, as hands or forearms, and are of no use for working with the screen. But if one is ever to use the rays in the first rush and press of wounded after an engagement it is clear that it can only be by means of the screen. There is no time for anything else. And as to use the screen efficiently demands a big spark and a heavy coil the thing becomes an impossibility at the actual front. Fortunately it is not really necessary there and could very possibly do harm by stimulating the young surgeon to premature operations in bad surroundings.

In the great majority of the bullet wound cases which come in the bullet has already passed out. In a good proportion of the remainder it is easily felt under the skin and extracted. These alone should be dealt with at once. On the other hand, the skiagram should, if possible, be taken before the necessary cleaning and splinter removing operations performed at the advanced base or line of communication hospital. The bullet will, of course, often be found in these even without the help of the rays. Putting aside these cases it is quite a small minority in which the location of the bullet remains hidden. These are just the cases which can wait and are at first merely dressed, or which (as in lung cases) only develop serious signs later, and are the ones which in a week or two will be arriving at the base. Besides these there are those cases in which no bullet is thought to be present but which do not go on well. These also can be skiagraphed as they arrive at the base and the source of irritation, be it bullet or sequestrum, often discovered. Although Domoko was fought on May 17th we did not often feel the want of the rays before we had our apparatus fixed which was not till June.

We believe, then, that the x rays in future wars will be of the greatest use but *not* at the actual front. In a European war they will of course be readily obtainable at the base, but so much of the surgery must be done before the cases get down so far that they will be wanted further forward than this. In Europe it will nearly always be possible to find some town near the fighting line with electric installations and this will be the place to choose. In our English service this would probably be the site of the most advanced of the line of communication hospitals. In wild countries the difficulty of obtaining electricity will always be enormous and must be the chief determining factor. In such difficulties the plan used is worth remembering. Every modern man-of-war can furnish an abundant supply which will, of course, be given for this purpose with pleasure.[2]

In Greece the apparatus was fixed in a room at the hospital at Phalerum. This was practically an advanced base hospital. Chalcis was ten hours nearer the front but there was no possible source of electricity. Phalerum also was near enough

[2] Since the above was written Major Beevor, R.A.M.C., has successfully worked with a primary battery at the front in the Afridi campaign.

to Athens for the Greek surgeons to bring us their cases. We obtained our electric supply from H.M.S. *Rodney* to whose officers we were much indebted for their willing help. We used no glass negatives, thus saving weight and having less chance of breakage. All the skiagrams were taken direct on to Eastman's positive paper and we would recommend this method to others in similar circumstances. In the only cupboard we could spare for a dark room we lacked that great essential a good water-supply, hence from insufficient washing some of the pictures have since considerably "fogged."

In addition to looking at all the cases in which we had reason to believe bullets or fragments of them were still in the tissues we took skiagrams of bullet fractures. These show plainly in what very various directions the lines of fracture may run from the point of impact. They vary from almost longitudinal to quite transverse. In some instances multiple fractures start from the bullet hole and in others the fracture commencing as one breaks up into several branches. One os calcis shows only a clean hole and another shows a true stellate fracture with the hole as centre. Fragments of bone in other cases have been driven into the surrounding tissues. Probably the unknown factor of range (and therefore velocity) would explain these differences. The absence of callus puzzled us at first, but callus of recent formation is not opaque to the rays, and all our skiagrams were taken at the latest within six weeks of the injury. The rays in addition to showing bullets brought out other sources of irritation—e.g., pieces of dirt and sequestra—and thus proved useful guides to a secondary operation.

The skiagrams should be taken in two different planes at right angles to each other as the body may be a mere scale or splashing of lead. This will be undiscovered in one plane and yet appear quite large in another. One English volunteer with a compound fracture of the tibia showed no bullet in Greece or on the first attempt in England, yet a large scale of lead was subsequently seen and removed. It is also important to remember that the skiagram will very likely show the bullet decidedly magnified if it is deeply situated in the tissues and some distance from the plate. This is seen in Fig. 6, where we took the bullet to be a Martini but it proved to be a small bore bullet. Since the apparent size of the bullet cannot be smaller than the real, if a bullet shows smaller than a certain calibre it is safe to say that it is not a bullet of that calibre; it is only in the opposite direction that mistakes occur. Conversely, if in any case we know what bullet has entered, its size on the skiagram will give us a rough clue to its depth. The track of the lead bullet in several skiagrams is marked by a number of small opaque points on the plate. These we do not remember to have seen previously described and think them to be small pieces of lead rubbed off the bullet in its course. There is no doubt that the belief that he has a bullet inside him even when false will worry a patient and keep him back. By taking a skiagram, having previously laid a wire on the skin to show on the plate, one can convince these sceptics that no bullet is there with immediate alleviation of symptoms.

The illustrations are given in order to show that even inexperienced hands working under considerable difficulties can get fair results rather than on account of any intrinsic merit, and also as a record of the first skiagrams taken in war time. All the original skiagrams were shown at the annual meeting of the Roentgen Society in the autumn of 1897. The reproductions in Figs. 1 to 8 are very accurate except that the bullets in Fig. 1 and Fig. 7 stand out too white and prominent. Even in the originals, however, they show with almost startling clearness and with their sharp definition of outline are much more conspicuous than any of the bones around them. The other fault is that the reproductions do not show certain details, especially the white marks in the course of the bullets and details at the line of fracture. The exposures were long as compared with our present ideas, but of course to show a bullet in bone the exposure should be longer than to show the bone alone as the bone must be penetrated by the rays. We no doubt made many mistakes of technique, at the details of which neither of us profess to be proficient. Besides those figured the most interesting cases were as follows: A wound of the shoulder in which the bullet could not be found. The skiagram showed a bullet just above the spine of the scapula near its vertebral border. This was subsequently removed. A bullet wound of the back of the thigh passing downwards. The patient had so much pain below the head of the fibula that the surgeon in charge explored the outer side of the leg here. Nothing was found and the case was brought to us. The skiagram showed a shrapnel ball in the soft parts on the outer side of the upper part of the popliteal space. This was cut down upon and found to be lying in contact with the external popliteal nerve which was pressed on but uninjured. In a case in which we had every reason to believe there was a bullet at the back of the orbit we failed altogether to see it either in a skiagram or on the screen. Many of the fractures skiagraphed showed interesting points, the main features of which have been described above.

THE SKIAGRAMS.

Fig. 1 is a skiagram of a bullet wound of the right wrist (Martini). There was a large wound situated above the base of the styloid process of the radius anteriorly. There was great swelling of the wrist and hand, especially on the radial side, and the bullet could not be certainly felt; movements at the wrist were very limited and there was no grating in the joint. The skiagram shows a fracture of the lower end of the radius with the comparatively transparent track or groove through this bone, which is widened, the bullet lying over the carpus and between the bases of the second and third metacarpals, which are uninjured. The original shows the bullet track marked by numerous white dots (? scrapings of lead). (Tube, 8 in.; exposure, 4 minutes.)

Fig. 2 shows the same hand as in Fig. 1 but taken at right angles. The skiagram shows the great thickening of the wrist and hand and that the bullet is lying near the dorsal surface with its distal end nearer the skin, thus keeping the direction in which it had entered the wrist. Slight flattening is seen on that side of the head of the bullet which first struck the bone. The case had been previously treated in a Greek hospital. The bullet was removed.

Fig. 3 represents a penetrating bullet wound of the hand (Martini). There were large ragged wounds of entry and exit with much damage to the soft parts. The skiagram, taken six weeks after the injury, shows oblique fractures of the second and third metacarpals. The callus scarcely shows. In the original the bullet track is plainly marked by (?) lead splashings. Taken through gauze and bandages. (Tube, 10 in.; exposure, 7 min. Case 40.)

Fig. 4 represents a penetrating bullet wound of the forearm. The bullet had passed from the outer side of the back of the forearm to the inner side of the front of the wrist. The holes of entry and exit were small. The skiagram shows the actual point of passage of the bullet between the bones with loss of substance in each filled with new bone. Oblique fractures of both bones pass upwards from here, the much more oblique one of the radius falling into a more nearly transverse one higher up the bone, thus separating a wedge-shaped piece on the ulnar side. The lower end of the ulna is slightly tilted. Very little callus. (Exposure, 6 min. Case 54.)

Fig. 5 shows a bullet wound of the forearm. The wound had been opened up by a Greek surgeon who had resected a broken piece of radius with its periosteum. The skiagram shows a gap in the radius exactly corresponding to this. The body seen among the muscles is therefore part of a bullet altered in shape. There was a hole of exit, so part of the bullet had escaped. The end of the lower fragment shows some bone thrown out by the damaged periosteum.

Fig. 6 represents a compound fracture of the humerus. The wound of entrance (small) was internal to the anterior axillary fold below the second rib. There was another wound at the back of the deltoid near its insertion and thought to be the wound of exit. The humerus was extensively comminuted in its second quarter. There was slight suppuration from the posterior wound and much callus. The humerus became enormously thickened, this thickening extending a long way down the bone. A small piece of bullet was removed from the exit wound. A body—callus or bullet—was felt in front of the fracture. The skiagram shows the bullet with flattened end on the inner side of the humerus at the upper edge of the callus. Its course from the wound of entrance can be made out in the original by lead marks. The opaque white patch behind the humerus is due to discharge from the posterior wound damaging the paper and shows the position of the sinus. The great sheath and second outline around the humerus was thought to be false and due to movement. It, however, appeared exactly the same at a second attempt and must be the callus, with which it corresponds and which was certainly remarkable in extent. The bullet was removed and proved to be a Mauser. (Case 63.)

Fig. 1.

Bullet Wound of the Right Wrist (Maktini). Bullet in Hand.

Fig. 2.

Same as Fig. 1, but taken at Right Angles.

Fig. 3.

Penetrating Bullet Wound of the Hand.

Fig. 4.

Penetrating Bullet Wound of the Forearm. Fracture of Radius and Ulna.

TO ILLUSTRATE MR. F. C. ABBOTT'S PAPER ON SUR

Fig. 5.

Bullet in the Forearm.

Fig. 6.

Compound Fracture of the Humerus.
Bullet in Arm.

Fig. 7.

Bullet in the Left Lung.

Fig. 8.

Bullet in the Femur (Martini).

Fig. 7 represents a bullet wound of the left lung. The wound of entrance was in front of the left shoulder joint. The patient developed pneumonia, then pleurisy with effusion. The serum became offensive, a rib was resected and the empyema was drained, but by the finger no bullet could be felt. The skiagram was taken nine weeks after receipt of the injury. It shows a Martini bullet lying pointing downwards and inwards over the eighth rib on a level with the lower angle of the scapula and extending inwards to the tips of the transverse processes. The white opacity of the bullet is exaggerated in the reproduction, but it stands out with clear definition in the original. The patient recovered. The bullet was not removed. The body was much emaciated. (Exposure, 25 minutes. Case 21.)

Fig. 8 shows a bullet in the femur (Martini). The wound of entrance was in the back of the thigh and quickly healed. The symptoms and the pain were slight. The case had been treated by a Greek surgeon. The bullet lies antero-posteriorly in the femur, apex forward. It is at the level of the upper border of the patella and therefore much below the line of reflexion of the upper pouch. The outline of the anterior surface of the femur is quite clean cut and there appears to have been no splintering here. There was considerable damage to the posterior surface which was better seen in the original. Looking with the screen in plane at right angles to this the bullet was seen to lie in the femur somewhat to the inner side. (Exposure, 35 min.)

(To be continued.)

"LETTER" WITHOUT "WORD" BLINDNESS.[1]

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IN three preceding papers[2] on word-blindness and its varieties certain views have been expressed which, in my opinion, afford the only reasonable explanation of all the varieties of this condition which are met with. Since the last paper my attention has been drawn to a rare form where the patient is able to read words but not the individual letters of which the words are composed—i.e., "letter" without "word" blindness. Recorded cases of this variety are excessively rare and my attention was specially drawn to it by the occurrence of two cases in the Western Infirmary of Glasgow. Since the occurrence of such cases forms powerful clinical evidence in support of the views maintained in the preceding papers I have thought that a critical examination of the visual phenomena manifested in this little-known variety—"letter" without "word" blindness—would prove an interesting appendix to the series of papers already published. I have to thank Professor Sir William T. Gairdner and Dr. James Finlayson for their kind permission to quote their as yet unpublished cases and also to express my great obligations to their assistants, Dr. James Carslaw and Dr. John Love, who supplied me with every facility for studying them. These cases were somewhat complex and the following must not be regarded as in any sense a complete report of them but simply as very brief records of the chief visual phenomena, that being the only aspect of these cases which concerns us in the present paper.

CASE 1. (Abbreviated from the notes supplied by Dr. John Love.)—A young man, aged twenty-four years, was admitted to Dr. Finlayson's wards in the Western Infirmary on March 19th, 1898. About four months previously his illness had begun somewhat suddenly with severe headache, vomiting, and feverishness, with stiffness of the neck and back and some deafness. Shortly thereafter there developed paralysis of the right arm, leg, and the right side of the face, with aphasia and profound apathy from which, however, he could be roused. The history and development of the case suggested that it was most probably a sporadic example of cerebro-spinal meningitis though rash was absent. Improvement was very gradual both as regards the general state and the paralysis and aphasia. When admitted into the Western Infirmary there were still present some paresis of the right side and a trace of loss of power about the right angle of the mouth. He had still aphasia which was motor or articulative in part and partly amnesic. There was a gradual improvement in his speech during his residence in hospital and before dismissal he could converse with the other patients and nurses. There was no word-deafness, all requests being quite promptly obeyed. His visual symptoms were somewhat remarkable. There was no object-blindness, as he could indicate by pantomime the use of articles presented to him and he could recognise by sight pictures, colours, and geometrical forms. When tested with words and letters it was evident that a peculiar condition was present. On testing him with letters it was found that he could neither read nor write a single letter of the alphabet except "T," which he generally recognised and always named "Tom" which was his own name. Nor could he point out any named letter except "T." The inability to recognise them was the same with all sizes and forms of letters both written and printed. On testing him with words, however, in a large number of trials it was quite evident that he could read almost every word presented to him, even words of three or four syllables and very unfamiliar ones, while at the same time he was quite unable to name or point out a single letter of the word he had just read. Such words as "stethoscope," "telescope," "electricity," "infirmary," &c., were read at once. The word "JOB" was read at once, but when the letters were arranged "OBJ" and he was asked to read them he could not name a single one. The contrast between the fluency with which he read the words and his inability to make anything out of the individual letters was very striking. Substantives he could make out much better than verbs and could read them with the greatest fluency. Slight intentional mistakes in spelling and even reversing letters were not observed by the patient who read the words just as if no alteration had been made and did not seem conscious of anything peculiar about the word. Numerals he recognised and named as far as "nine," but not beyond that, and only the Arabic numerals and not the Roman. There was no amusia; the patient could name and intone correctly the signs of the new notation but could not name them as letters of the alphabet. During his residence in hospital the patient's power of reading words improved so that when he was shown to the Glasgow Medico-Chirurgical Society on May 6th, 1898, he could interpret correctly any request in printing or writing and was able to read a letter written by himself. He had been instructed to educate himself by learning the letters of the alphabet again. This was done but only with partial success. When he left the hospital about three months after admission he was able to recognise some letters but only occasionally and with many failures. He could write a few letters to dictation but he made many mistakes. On May 2nd he wrote the following letter which he was able to read afterwards:—

DEAR MOTHER,—Please send my clothes to-morrow and my boots as I am getting on the grounds. I am keeping better; hoping you are well.

He addressed the letter quite correctly. On attempting to write the alphabet from memory he wrote as follows:—"a, b, c, d, e, i, j, h, m, n, s, u, w, v, y, z," and the following letters being dictated he wrote as follows:—

Dictated h, wrote h.	Dictated c, wrote c.
,, y, ,, l.	,, f (failed).
,, p (failed).	,, d, wrote a.
,, r (failed).	,, n (failed).

Numerous trials as to his power of writing and reading individual letters were made but the above may be taken as a fair sample of the measure of success attending these trials. While he failed with many of the letters he wrote readily words beginning with the same letters. In the above trial he failed to write "p," "r," or "n," but wrote quite readily "pot," "Robert," "nail," and so on. He left hospital at the end of May and has not been seen since the above examination was made, so that nothing can be said as to his further progress.

As a parallel to this case I will briefly quote a case reported by Dr. Byrom Bramwell,[3] selecting only those features of it which specially interest us in the present paper.

[1] A paper read at a meeting of the Glasgow Medico-Chirurgical Society, Nov. 18th, 1898.

[2] THE LANCET, Dec. 21st, 1895, Nov. 21st, 1896, and Feb. 12th, 1898.

[3] Edinburgh Medical Journal, 1887, p. 241.

CASE 2.—A man, aged sixty years, was suddenly seized with loss of power of the right hand and arm with aphasia on Dec. 22nd, 1886. On March 9th, 1887, he came under observation with paralysis of the right hand and arm, considerable motor aphasia but no word-deafness. There was partial right homonymous hemianopsia. "The patient," says Dr. Bramwell, "is unable to recognise a single letter of the alphabet; he can neither spontaneously name the letter when it is shown to him nor can he when the names of the different letters are repeated aloud to him indicate when the particular letter which he is asked to recognise is named. He is unable to recognise figures either spontaneously or when they are named to him. Soon after the patient first came under my observation his wife who always accompanied him when he came to see me stated that he was able to read and make out some things which interested him in the newspapers. I paid very little attention to this statement, for it is well known that aphasic patients who are utterly unable to read a single word not unfrequently occupy themselves with a book or a paper and appear to their friends to be intelligently interested. Knowing that this patient was unable to read a single letter of the alphabet I paid no attention to this statement. When, however, his wife stated on a subsequent occasion that he had when walking in the cemetery read to her the names (with which, be it observed, he had not been previously acquainted) on some of the tombstones correctly and also that he had on another occasion turned up and pointed out in a guide-book the name of a landlord about whose property they were talking my attention was aroused and I found on investigation that the patient could read many words the individual letters of which he was totally ignorant of even when they were named to him. Thus on June 1st he read correctly the words which I had written to him on a piece of paper, but he was totally ignorant of the individual letters composing the words which he was able to read and did not know them when they were named."

CASE 3.—A case of somewhat similar character to the two preceding ones but in which the letter-blindness was not so complete has been recorded by Broca. Not having been able to see the original report of this case I quote it from Brissaud's article on Aphasia.[4] "A patient may suffer from letter-blindness and not from word-blindness proper or he may be blind to words and not to letters. While this is true letter-blindness is, as a rule, accompanied by word-blindness. That letter-blindness may exist without word-blindness is illustrated by a case reported by Broca. This patient was attacked by partial letter-blindness—that is to say, he had lost the visual memories of some letters. He could read words, however, in which were letters he did not know and one could change the place of letters in a word or even suppress some without his perceiving it."

CASE 4. (Abbreviated from notes supplied by Dr. James Carslaw.)—On Jan. 18th, 1898, a young married woman, aged thirty years, had a sudden attack of right hemiplegia with aphasia. She was admitted to Professor Sir W. T. Gairdner's wards in the Western Infirmary on Feb. 1st. She was found to be seven months pregnant; she had a previous history of rheumatism and the physical signs of mitral obstruction. She had right hemiplegia, the leg, arm, and face being involved. There was complete motor aphasia which remained persistent during her whole stay in hospital, the patient only being able to say two or three words on dismissal. There was no word-deafness. There was complete word- and letter-blindness on admission, the patient being unable to recognise any word, letter, or figure, printed or written. From this word-blindness there was a gradual recovery and when tested on June 8th, a month before her dismissal, she recognised all the words submitted to her and all the letters of the alphabet and figures in any combination. From the period of her admission the power of recognising words, letters, and figures was very carefully tested from time to time. These successive examinations elicited the remarkable fact that there was not a simultaneous improvement in her power of recognising the various forms of printed and written characters but that she first acquired the power of recognising numerals, then words, and last of all the individual letters of the alphabet. This progress will be most vividly seen by briefly quoting extracts from the ward journals bearing on this point. "Feb. 1st: The patient was unable to recognise any printed or written words, letters, or figures." "Feb. 22nd: If the page of a book is read aloud to the patient she can follow with her finger and point to the last word when a stop is made. She fails, however, to detect intentional mistakes made when reading. She can pick out with her finger a word here and there. She cannot point out a single letter of the alphabet except 'a' which she generally recognises correctly. She now recognises the Arabic numerals." "March 7th: The patient can now apparently understand printed matter though some words seem to puzzle her. She can follow with her finger as the page is read and detect intentional mistakes fairly well. She can now pick out a few letters of the alphabet but with very variable accuracy. Arabic numerals are recognised at once both individually and in combinations up to 100, but beyond this she has difficulty." The patient was now dismissed owing to her approaching confinement and was readmitted in May. The next examination was made therefore after an interval of about two months. "May 16th: The patient recognises words correctly and easily. She often indicates the recognition of the word by pointing to the corresponding object. She can with greater accuracy than before correct mistakes intentionally made in reading. She does not, however, readily detect slight mistakes in spelling—e.g., 'chiar' for chair—though she at once points to the object indicated. The individual letters composing the words are not, however, easily recognised, and when asked to point out individual letters of the alphabet she makes very many mistakes. She makes fewer mistakes with the small letters than with the capitals. She recognises Arabic numerals correctly and quickly, and to higher figures than formerly, but not Roman figures." "June 8th: The patient now recognises printed and written words rapidly and correctly. She quickly indicates with her finger any intentional mistakes made in reading aloud to her. She at once points to any word named. She can now pick out all the individual letters of the alphabet both small and capital. She recognises Arabic numerals in any combination and now also recognises Roman figures. In short she has now regained the power of recognition of all the printed and written characters with which she was previously familiar." The patient was dismissed on July 9th.

CASE 5.—As a parallel to this case where the patient, completely word- and letter-blind, recovered the power of reading words before letters I can quote briefly a case reported by Dr. MacVicar at a meeting of the Forfarshire Medical Association on Feb. 4th, 1898.[5] The patient was a young man, a painter by trade, who had received a fair education. His head was struck forcibly against the edge of a dresser on Dec. 27th, 1897, the injury being over the right parietal eminence. He suffered from symptoms of concussion and after recovery from this was unable to read. He gradually improved and was able to read aloud and wrote to dictation short words before he could recognise letters. He understood "written speech" subsequently to being able to read aloud. He could read simple sentences in fourteen days and numerals in nineteen days after the injury. The lesion was supposed to be of the nature of a hæmorrhage due to *contre-coup* over the left angular gyrus and possibly affecting the supra-marginal and posterior part of the third temporo-sphenoidal convolutions.

These five cases make it quite clear that there is a distinct variety of "letter-blindness" where the individual though able to read words cannot read the individual letters of which the words are composed. Recorded cases of this kind are rare and Dr. Bramwell in narrating his case remarks that he is not aware that such a condition has been previously described. The rarity of such cases, however, is, I think, chiefly owing to the circumstance that when they do occur they are not recognised. The fact of there being two in the Western Infirmary at the same time forms a strong presumption that such cases are by no means so rare as is commonly supposed. Such cases escape observation because the patients are not accurately tested as to their power of reading not only words but also individual letters. If the patient can read words the examiner may not know the necessity of also testing his power of reading letters and, conversely, if he finds the patient unable to read letters he will probably take it for granted that he is also unable to read words. If all patients were carefully tested as a matter of routine both with words and individual letters the number of recorded cases belonging to this category would be rapidly increased.

How are we to explain the at first sight startling fact that

[4] Traité de Médecine, Paris, 1894, tome vi., p. 241.

[5] THE LANCET, Feb. 19th, 1898.

these patients whilst able to interpret words could no longer interpret the individual letters of which the words were composed? In my last paper[6] I discussed at length a class of cases exactly the converse of those at present under consideration—viz., cases in which the patients could read the individual letters but could not recognise by sight the words composed of aggregations of these letters. Both classes of cases are explained in precisely the same way. The fact of the existence of these two definite classes of cases, the one being the complement of the other, is the strongest possible proof of the correctness of the views set forth in detail in the last paper, where it was maintained that clinical evidence demonstrated the complete independence of the visual memories of letters and of words and that this complete functional independence could only be reasonably explained on the assumption that these distinct groups of visual memories are stored and preserved in different but probably contiguous areas of the cerebral cortex.

The ability to recognise by sight the individual letters of the alphabet is acquired by the individual in a comparatively short space of time, there being only 26 letters in our alphabet, or double that number taking small letters and capitals. At first we read words by spelling them out letter by letter and by thus analysing the word into its constituents of letters and syllables. Individuals who have not progressed beyond this stage—i.e., who read all words by analysing them into their individual letters—would necessarily become blind to words if they became blind to letters. But by years of persistent labour and practice we gradually acquire and store up the visual memories of words. When this stage has been reached the individual reads not by analysing each word into its individual letters but by recognising each word as a separate picture. The words cease to be for such an individual simply a congeries of letters; each word is regarded rather as an ideogram, picture, or symbol which suggests a particular idea. That this is the true explanation is confirmed by the facts observed in three of the preceding cases.

In Cases 1, 3, and 4 slight mistakes in spelling, changing the place of some of the letters, and even suppressing a letter, were not noticed by the patient. In Case 1 even when one or two letters in a word were reversed—such as "LOVE" instead of LOVE—the patient did not seem to notice anything amiss but read the word correctly without making any remark. From these observations it is clear that these patients recognised the words by their general form alone. A slight alteration in one or two letters was therefore not observable so long as the general form and appearance of the word were preserved. In fact, these individuals recognised a word just as they recognised a landscape or a familiar face, by their general outline and form, without resolving them into their constituent details. It is therefore easily conceivable how such individuals who have thus acquired by long and constant education the power of reading words by sight not phonetically but ideographically can lose the visual memory of the individual letters and yet retain the visual memory of words or, to put it briefly, such individuals may be "letter-blind" without being "word-blind."

In my previous papers[7] it was pointed out that in the visual memory centres the visual images or memories are arranged in definite groups having a certain independence of each other. The visual memories of objects, of places, of forms, and of colours are deposited in different brain areas from the visual memories of words, letters, and figures. Hence we have word- and letter-blindness occurring without the loss of these other forms of visual memory. Further, it was argued from the clinical evidence that the visual word-centre (generally regarded as occupying the left angular and supra-marginal gyri) is itself complex and that within it are stored different groups of visual symbols—numbers, words, and letters—in quite distinct but probably adjacent cerebral areas. In my first paper[8] the complete independence of the visual memory of numbers from that of words and letters was proved from the clinical evidence and the conclusion was drawn that these must be deposited in separate cerebral areas. Bastian,[9] in his recent admirable work on aphasia, has evidently adopted this view which was argued in detail in my first paper. He adds an important piece of confirmatory evidence. "Destruction of the visual word-centre," he says, "is the common cause of word-blindness. If there should be a separate seat for the registration of numerals it is suggested that its escape from damage would account in all probablity for the preservation of the ability to read and the ability to write numerals. That this is the true explanation seems all the more probable because on rare occasions it has been found that loss of ability to read and comprehend numerals exists in the absence of word-blindness. One such case has been recorded by Trousseau and another by de Capdeville in which there was a transitory defect of this kind." Now precisely the same clinical evidence can be brought forward to show the complete independence of the visual memories of words and letters In the last paper[10] four cases of great purity were quoted and discussed in which the patients could read fluently individual letters but not words. In the present paper 5 cases are adduced in which the patients could read words but not letters. The clinical evidence therefore clearly indicates the complete independence of these two groups of visual memories and hence justifies the inference that these are deposited in distinct areas of the cerebral cortex. This is precisely the chain of reasoning which led to the inference that the numerals were stored in a separate cerebral area, and if the reasoning is sound in the case of the numerals it is equally valid in the case of the words and letters. Since the visual memories of letters and words are usually lost together it is highly probable that the areas in which they are stored are contiguous. When there is only partial destruction of the centre and that part of the centre in which are stored the visual memories of letters remains intact, then the patient can read individual letters but not words; on the other hand, when the letter area is destroyed and the part in which are deposited the word memories is still functionally active then the patient though he cannot recognise an individual letter can recognise words just as in the cases under consideration in the present paper. When the destruction of the centre is partial and irregular, part of each area being destroyed, then the patient will be able to read some words and some letters, the extent of the ability to read being dependent upon the extent of cerebral cortex within the centre which is still functionally active. The cerebral area destroyed may be very irregular and hence arise those very peculiar cases of which several examples are quoted in my last paper. In fact, the varieties are endless but the view here expounded is the only one which renders all these varieties intelligible.

Case 4 affords a very striking confirmation of this view that the visual memories of numerals, of letters, and of words are stored in perfectly distinct though adjacent cerebral areas. The lesion in this case was almost certainly an embolism, blocking up the left middle cerebral artery, cutting off the blood-supply to the left motor area, to Broca's convolution, to the visual word-centre in the left angular gyrus and hence the symptoms, right hemiplegia, aphasia, and word-blindness. At the outset this patient had lost the visual memories of all the symbols printed and written—numerals, words, and letters—with which she was previously familiar. That this is the condition most commonly met with is easily understood when we consider that all these visual memories are deposited in areas which though distinct are certainly close together and probably contiguous. It is only when a part of the area escapes that these cases are met with where the patient retains some special group of visual memories. The vascular supply of the central cortex is liable to considerable variation. As a rule the visual word-centre is supplied by a branch of the middle cerebral artery and here evidently this branch supplied the centre in its whole extent. Hence the complete blotting out of the visual memories of numbers, words, and letters. In a case previously reported by me[11] the patient lost only the word memories and retained those of figures and letters. Here part of the word-centre was probably supplied by a branch of the posterior cerebral and hence escaped destruction. This variation of vascular supply no doubt explains many of the clinical varieties of this defect which are met with. In the case under consideration the visual word-centre gradually recovered its functional activity, probably by a gradual restoration of the blood-supply through anastomosing channels. In the gradual restoration to functional activity of the centre the outstanding feature is that the patient first gained the power of recognising Arabic numerals, then words, and,

[6] THE LANCET, Feb. 12th, 1898.
[7] THE LANCET, Dec. 21st, 1895; Nov. 21st, 1896; and Feb. 12th, 1898.
[8] THE LANCET, Dec. 21st, 1895.
[9] Aphasia and other Speech Defects, p. 283, London, 1898.
[10] THE LANCET, Feb. 12th, 1898.
[11] THE LANCET, Feb. 12th, 1898.

last of all, individual letters. I do not know of any more convincing proof which could be brought forward to demonstrate that these different groups of visual memories are deposited in distinct cerebral areas. If the centre was simply the general repository of these visual memories without any definite grouping or arrangement of them then there would have been a gradual simultaneous recovery of numbers, words, and letters, which was not the case. On the other hand, if these three distinct groups of visual memories are deposited in definite and distinct areas within this centre, then as the blood-supply is gradually restored, enabling the successive areas to resume their functional activity, it is to be expected that the patient would regain the different groups of visual memories in successive order, as actually took place in the case under consideration. It is to be observed that the order of recovery is not from the simple to the complex but that the power of recognising words was recovered before the power of recognising letters. This order of recovery was also observed in Case 5 already briefly quoted.

The order of events cannot therefore be explained simply by a gradually increasing functional activity of the centre as a whole, nor do I see any other way in which the phenomena observed can be intelligibly explained than on the ground of distinct areas within the centre being occupied with these different groups of visual memories—numbers, words, and letters.

In this series of four papers an attempt has been made to give some reasonable explanation of the phenomena observed in the various forms of "mind-," "word-," and "letter-blindness." The views set forth therein have been arrived at by a minute analysis of cases observed and by a critical study of the clinical observations of others. They have the merit of simplicity and of rendering more intelligible the varied and manifold phenomena met with in these conditions.

Glasgow.

A CASE OF TUMOUR OF THE UTERUS COMPLICATED BY TWIN PREGNANCY; CÆSAREAN SECTION; RECOVERY.

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ON August 20th, 1898, I was called to attend a black woman who had been in labour since the evening of the 18th. The labour pains were strong and frequent, but the labour had not progressed and she was in great pain. After examining the patient I ordered her to be removed at once to the Lucea Hospital with a view to the performance of Cæsarean section. The following is a short account of the case compiled from the notes taken on the hospital case sheet. I may add that I was ably assisted in this operation by Dr. C. M. Phillips and Mr. J. J. Rogers, the Government Medical Officer at Green Island.

The patient was a black woman, about thirty years of age, and was admitted into the hospital at 9 A.M. on August 20th, 1898. She had been in labour since the evening of the 18th. The abdomen was very much distended and the labour pains were frequent and strong. On vaginal examination a large, firm, elastic tumour was found occupying the pelvic brim and projecting into the upper part of the pelvic cavity. There was a space of about an inch between the anterior surface of the tumour and the symphysis pubis and a similar space on each side between the tumour and the pelvic brim. The tumour was fixed and could not be moved. The os uteri could not be felt at first, but on curving the index finger behind the symphysis and pushing it up as far as possible the os was felt above the pubes slightly to the left of the middle line. The os was partially dilated and flattened antero-posteriorly, simulating a slit-like opening, and was on a level with the upper border of the symphysis. When the patient assumed the upright position the distension of the abdomen was most noticeable and on examination per vaginam in this position the os could not be felt with the finger. Dr. Phillips and Mr. Rogers having examined the patient in consultation with me it was decided to perform Cæsarean section without delay. A vaginal douche was administered and the rectum was emptied by an enema. The urine was drawn off by a catheter and the abdominal surface was thoroughly cleansed and asepticised. Chloroform was administered at 11.15 A.M. and the operation commenced at 11.30 A.M. A vertical incision was made in the middle line 6 in. in length, from 1 in. below the umbilicus to about 2½ in. above the symphysis, and was continued through the abdominal wall, only two small arteries requiring torsion. The peritoneum was exposed and divided on a director the whole length of the wound. There was no bleeding from the abdominal wound after the two small arteries had been twisted. The uterus was brought forward into the abdominal wound and fixed there by Dr. Phillips. A vertical incision was made in the anterior wall of the uterus commencing near the fundus and extending downwards for about 4½ in.; the hæmorrhage was rather free. The membranes were ruptured and a male child was extracted by the feet, the head being delivered last. It was then found that there was another child in the womb situated behind the first, with the head at the fundus and the breech at the lower segment of the womb. This was quickly extracted, the head coming first and the legs last. There were two distinct placentæ which required a considerable amount of manipulation to extract. The hæmorrhage ceased after the placentæ were removed. It was then seen that there was a large solid fibroid tumour of the body of the uterus involving the whole of the posterior surface and right side from the fundus to the cervix and extending down behind the cervix into the pelvis. The incision happened to be made along the anterior border of the tumour, so that the left lip of the wound in the uterine wall was through normal uterine tissue and the right lip was along the edge of the tumour. There was also a smaller fibroid tumour on the left side of the uterus, of about the size of a small apple. The uterine appendages on either side appeared to be normal. The uterine tumour was 9 in.

The white marks on each side of the abdominal wound are due to reflected light and not to any discolouration of the skin. The groove is the result of the strapping; it has now gone and the surface of the wound is level with the abdominal wall.

in length, 7 in. from side to side, and about 5½ in. antero-posteriorly. It was pear-shaped, being broader at the fundus and narrower at the pelvic brim. The uterine wound was closed by 5 large, deep, silk sutures passed through the uterine wall and 10 small sutures of fine silk through the peritoneum. There was no oozing through the wound after the application of the sutures. Sponges on holders were passed down into Douglas's pouch and on each side but they returned unsoiled showing that there had been no escape of blood into the

peritoneal cavity. The parietal peritoneum was then brought together by a continuous fine silk suture and the abdominal wound was closed by 6 large deep sutures, passed through the whole thickness of the abdominal wall, about ¾ in. apart, and about 1 in. from the edges of the wound. 10 small superficial stitches were passed through the skin alone and the wound was completely closed. There was no oozing from the wound after it was closed. No drainage tube was passed into the abdominal cavity. The wound was sprinkled with a mixture of boric acid powder and iodoform and covered with a layer of oiled silk. Over this was placed iodoform gauze, sal alembroth gauze, and lint soaked in carbolic acid lotion, and over all a layer of wood-wool dressing, the whole being kept in position by an abdominal bandage. An injection of strychnia (1/30 gr.) was given hypodermically and a morphia suppository (¼ gr.) was placed in the rectum. The operation was over at 12.30 P.M. and the woman was replaced in the bed at 1 P.M. The children were both males—one weighed 5 lb. and the other 4½ lb. They were puny, weak, and thin. When removed from the womb the first one did not breathe and the second gave only one or two gasps, but they were both thoroughly revived in ten minutes. The urine was drawn off at 5 P.M. At 4 P.M. the temperature of the patient was 100° F. and at 8 P.M. it was 101° when there was no pain, but there was a bloody discharge from the vagina. At 11 P.M. the temperature was 101° and the pulse was 114. The next day (August 21st) at 6 A.M. the temperature had declined to 99° and there was neither hæmorrhage in the vagina nor pain in the abdomen. At 10 A.M. the temperature was 100° and the pulse was 96. The vagina was douched with carbolic lotion (1 in 80). The vaginal discharge was normal and without odour. The temperature from 2 P.M. to 2 A.M. on the 22nd remained at 101° and the pulse was 108. The patient slept well on the night of the 21st. She had no hæmorrhage or pain, the lochia were normal, and she took nourishment well. At 6 A.M. the temperature was 99·4° and the pulse was 108. At 2 P.M. the temperature had risen to 101·6° and the patient complained of griping pains in the abdomen, her temperature at 6 P.M. being 102·2° and her pulse 126. The bloody discharge from the vagina was now more copious than before. A douche of carbolic lotion (1 in 80) was administered. At 10 P.M. the temperature had declined to 101°. On the 23rd the temperature at 6 A.M. was 99·4° and the patient was doing well. She had slept well at night. Her pulse was 106. The temperature at 2 P.M. was 101·4°. At 5 P.M. another douche was administered. At 10 P.M. her temperature was 101·4°. On the 24th the temperature at 6 A.M. was 100·4°. The patient had slept fairly well and had had no pain or hæmorrhage. She was, in fact, very comfortable. At 2 P.M. the temperature was 102·6°. The discharge from the vagina was copious and in large clots, but the odour was normal. The vagina was douched again. The patient complained of pain in the breasts. At 6 P.M. the temperature was 104·4° and the pulse was 122. The odour of the discharge was normal. The left breast was rather full and the tongue was slightly furred, the temperature at 9 P.M. being 102°. On the 25th the temperature at 3 A.M. had declined to 99·8° and at 7 A.M. to 99·4°. The patient had slept well, but had pain in the back. At 9.30 A.M. the wound was dressed for the first time, when there was no soiling of the dressings and the wound had partially united by first intention. The discharge from the vagina was free and normal and the pulse was good. The temperature at 4 P.M. was 103·2° and the pulse was 106. At midnight the temperature was 103°. On the 26th at 6 A.M. a soap-and-water enema was administered. The lochia were greenish in colour but normal and there was no pain in the breasts. The temperature was 102° and the pulse was 106. At 5 P.M. the temperature was 103·4° and at 11 P.M. it was 101°. On the 27th at 6 A.M. one large and four small stitches were removed. A slight amount of thin purulent fluid exuded from one of the large stitches. The temperature was 102° and the pulse was 114. At 1.30 P.M. the temperature was 103·2° and at 9 P.M. it was 101·6°. On the 28th at 7 P.M. an enema was given and the bowels were freely opened. The temperature was 101·2° and at 1.10 P.M. it was 102·6°. On the 29th I found that she had passed a restless night and this morning she lost the power of motion on the left side and her speech was indistinct. There was pain in the right side of the chest and the back. The wound was dressed and looked well, but there was a slight discharge from its lower end. There was no tenderness over the womb. The patient rapidly recovered the power of motion and of speech. The lochia were less but were normal. Both lungs were found to be much congested at the bases at the back. The temperature at 7 A.M. was 101° and at 4 P.M. 102·4°. On August 30th the patient's condition was better. Her speech was clear, the abdominal wound was healing, and the vaginal discharge was normal. The temperature at 9 A.M. was 101·4° and at 10 P.M. it was 102·6°. The pulse at 9 A.M. was 98. On the 31st the temperature kept at 101° during the day, and on Sept. 1st, at 9 A.M., it was 99·6° with a pulse of 92. At 5 P.M. the temperature became normal and remained so on the 2nd with a pulse of 86. On the 3rd it was 99·4° all the day and the patient was much improved and stronger. The improvement continuing, on the 4th four stitches were removed. The wound was healing. From this day until the 10th the temperature did not rise above 99·4°. On that day at 6 P.M. it was 101·4° and at 10 P.M. it was 102°, with a pulse of 120. On the 11th the temperature became normal and the pulse was normal also. The abdominal wound was now quite healed and the uterine tumour was much smaller. On the 15th the patient began to walk about the ward and on the 20th she was discharged.

This case of Cæsarean section is interesting in many ways. It shows in a remarkable manner the fact that the presence of a large fibroid tumour of the body of the womb of the dimensions above mentioned did not interfere with the progress of a twin pregnancy to the full term, nor did it prevent the normal uterine tissue from contracting and retracting firmly after the removal of its contents as shown by the normal amount of lochia passed during the puerperium. The only abnormal symptom which occurred was the continued high temperature which was undoubtedly due to the severe congestion of the lungs which lasted for some days. A dose of sulphate of quinine (30 gr.) was given daily during the pyrexia and hot linseed meal poultices were applied to the back and front of the chest and after the pulmonary congestion had subsided the chest was wrapped in cotton wool. During the fever the lochia remained perfectly normal and she never had any symptoms to be referred to the womb itself. The abdominal wound healed without any trouble with the exception that a slight amount of pus collected in two of the larger stitches which was caused by tension. After the tension was relieved by strapping the wound healed readily. The bowels were opened on August 26th by a soap-and-water enema and on Sept. 1st they acted normally. The urine was drawn off by a catheter every five hours until Sept. 2nd when she first passed it of her own accord and continued to do so afterwards. Another interesting feature in this case was the remarkable and rapid diminution in size of the fibroid tumour after the operation. A month after the operation it was only about one-third of its original size. This was probably due to the gradual decrease in the blood-supply. The twins were thin, ill-nourished, and weak. I am inclined to think that this was caused by the tumour which used up for its own support a considerable portion of the blood-supply which would otherwise have been devoted to the nourishment of the placentæ. After the pregnancy had ceased and the blood-supply of the uterus had decreased the tumour also rapidly became smaller. The twins are alive at the time of writing (seven weeks after the operation). One of them is strong and healthy but the other is weak and thin and is evidently very delicate. The mother is quite well and strong and the fibroid tumour is causing her no inconvenience.

Luces, Jamaica.

A CASE OF OPERATION FOR EXTREME MYOPIA.

BY ROBERT BRUDENELL CARTER, F.R.C.S. ENG.,
CONSULTING OPHTHALMIC SURGEON TO ST. GEORGE'S HOSPITAL.

THE possibility of curing a high degree of myopia by the removal of the transparent crystalline lens has of course been present to the minds of ophthalmic surgeons from the time when the refraction of the eye first received careful consideration, but until recently the risks of the operation were rightly held to outweigh the prospects of benefit from its performance. It is only since these risks have been

practically extinguished by the introduction of aseptic methods of procedure that the question has been reconsidered by the light of modern experience; and that, especially upon the continent, some very gratifying results have been attained. In this country I have not heard of any large number of cases; and am therefore desirous of placing on record one which well illustrates the results which may be obtained.

My first experience of the operation was obtained about twelve years ago in the case of a young gentleman, a pupil at one of the great public schools, who was brought to me on account of high myopia, inherited from both his parents. I found in his left eye a myopia of 14 dioptres, while in the right the defect appeared to be about the same, but was not precisely measurable on account of some cloudiness of the lens. For this eye I advised operation, and performed discission and evacuation of the lens in the usual way in the course of a summer vacation. He went back to school at the beginning of the next term, and at its close rushed into my consulting-room on his way from the railway terminus to his home, exclaiming in boy fashion, "I say, couldn't you inoculate my other eye with cataract and do that too?" There were reasons against his proposal, but the operated eye continues to give him excellent distant vision, and he is relieved from most of the inconveniences incidental to short sight.

A young lady, then about nine years old, was first brought to me in 1881 with high myopic astigmatism, and defective sight when it was corrected. She obtained $\frac{5}{24}$ from glasses of – 6 dioptres spherical, – 3 dioptres cylindrical, axes horizontal, and beyond this I could not carry her. In 1884 the myopia had increased, but the vision rose to $\frac{5}{9}$ with – 9·0 spherical and – 3·5 cylindrical. In 1887 the right eye required – 10·0 spherical and – 4·5 cylindrical, the left – 9·0 spherical and – 4·0 cylindrical. In 1892 the right eye required – 14·0 spherical, the left – 11·5 spherical, both with – 6·0 cylindrical. In 1894 another dioptre spherical was required for each eye; and in 1896 the right had – 18·0 spherical and – 6·0 cylindrical, the left – 12·5 spherical and – 6·0 cylindrical. During all this time the corrected vision remained somewhere about the same but the condition of the patient was increasingly pitiable. She once dropped her glasses in her own bedroom and could only find her way to the door by feeling for it around the walls. For the last year or two I had been advising her to undergo operation, and on August 6th, 1898, I broke up the right lens with a needle. On the 12th the left lens was needled and the right a second time. On the 15th the fragments of the right lens were evacuated. On the 19th the left lens was needled a second time and evacuated on the 22nd. On August 5th I tore a central opening in residual capsular films and on the 8th the patient left town for Scotland. In evacuating the broken lenses I was mindful of the high degree of astigmatism, and sought to correct it by making large incisions at the lower corneo-scleral junction, perpendicular to the vertical meridian. I heard of the patient from time to time as bicycling in Scotland without glasses, and as having good distant vision with inability to read; but did not see her until Nov. 11th. Her unaided distant vision was then better than it had ever before been with the help of glasses, of which for all ordinary purposes she was quite independent; but it was raised to $\frac{5}{5}$ for the first time in her life by + 1·5 spherical, adding for the right eye + 0·5 cylindrical, and for the left + 1·5 cylindrical, axes vertical. With + 4·0 spherical and the same cylinders she read "brilliant" type with perfect facility and has since continued to do so without discomfort or fatigue. My latest intelligence of her is that, without glasses, she had been competing with friends in shooting at glass balls projected from a trap, and that she "hit as many as any of the rest."

It was a noteworthy feature of the case that the eyeballs never presented the ordinary myopic formation, but, on the contrary, were rather small and deep set; so that on looking at the patient without her glasses I should have conjectured her to be hypermetropic. I was inclined to infer from this circumstance, as well as from the absence of any large crescents around the optic discs, that the myopia was due, at least in some measure, to a high index of refraction of the crystalline lenses; and this conjecture seems to be borne out by the large amount of effect which the removal of the lenses produced. Such removal in normal eyes which are the subjects of ordinary senile cataract seldom makes a greater difference in the refraction than about 10 dioptres; but in the case under consideration, without regard to the astigmatism, the difference amounted to 14 dioptres in the left eye and to 19½ in the right. Rectification of the high astigmatism was produced to the extent of 5½ dioptres in the right eye and to the extent of 4½ in the left; but it is impossible to say in what degree the change was due either to the removal of the lenses or to the extent and position of the incisions by which I endeavoured to relax the curvature of the vertical meridians. It was my intention to measure the curves of the corneæ before operating, so as to ascertain how far any differences between them would account for the astigmatism, but an accidental circumstance prevented me from carrying this intention into effect. On the whole, I think the results of the case are not only satisfactory but highly encouraging to those who may be called upon to deal with similar conditions, for there can be no reasonable doubt that any eye with a myopia of above 12 dioptres is likely to work under more favourable circumstances without a lens, and thus without the strain of accommodation, than it would do if suffered to struggle against its defect. If this be so the operation is not only calculated to increase the comfort and well-being of the patient, but also to remove from highly myopic eyes many of the most serious risks by which that condition is beset.

Harley-street, W.

Clinical Notes:

MEDICAL, SURGICAL, OBSTETRICAL, AND THERAPEUTICAL.

NOTE ON THE TREATMENT OF CHILBLAINS BY THE ELECTRIC BATH.

BY H. LEWIS JONES, M.D.CANTAB., F.R.C.P. LOND.,
MEDICAL OFFICER IN CHARGE OF THE ELECTRICAL DEPARTMENT AT ST. BARTHOLOMEW'S HOSPITAL.

AT this time of the year the treatment of chilblains is a problem which presents itself to many medical men. A note on the use of the electric bath for this purpose may therefore be useful. The use of electricity for chilblains is by no means new, but my impression is that it is seldom employed. I have long been struck by the fact that children with infantile paralysis who are very subject to chilblains in the winter time often become quite free from chilblains during the electric bath treatment of their paralysis. Indeed, this is frequently the first sign of improvement which they show. During last winter and also during the present winter I have been trying the effect of electricity in a case of chilblains of a severe type with excellent results. The method of application is very simple. An induction coil is used and the wires are attached to two metallic plates, which are placed at the two ends of an ordinary earthenware foot bath filled with warm water. The patient is instructed to use this bath at bedtime for ten or fifteen minutes whenever the slightest threatening of chilblains is noticed. The current is used as strong as it can be borne without discomfort, the effect being to make the feet warm with a glow which lasts until the patient goes to sleep. Any swelling or congestion of the toes quickly disappears and all danger of serious trouble from a broken chilblain is warded off. Besides its use for the prevention of actual chilblains the treatment may be used in cases where patients complain of cold feet. The electric stimulation seems to improve the circulation in the extremities to an extent far superior to anything which can be obtained from an ordinary warm foot bath. A short course of electric foot baths for eight or ten consecutive nights not only dispels chilblains which have already formed, but seems to produce an improved state of the circulation which renders the patient more or less chilblain-proof for some time after the baths have been stopped.

Wimpole-street, W.

NOTE ON AN INTERESTING CASE OF PEMPHIGUS.

BY SIDNEY ROACH, M.R.C.S. ENG., L.R.C.P. LOND.,
SURGEON, R.N.

A BOY, aged seven years, was taken on board H.M.S. *Columbine* at Bay Bulls, Newfoundland, suffering from a severe, non-irritating eruption of bullæ all over the body

with the exception of the hairy scalp, the upper part of the face, and the palms of the hands. On inquiry the father of the patient said that the eruption appeared soon after birth and had always been present from that time; as some of the vesicles disappeared others made their appearance. The child had never suffered from snuffles, there was no sign of congenital syphilis, and he had never been vaccinated. The eruption was present chiefly on the posterior surface of the body and legs, though there were scattered patches all over the trunk and limbs. There was a very large area of bullæ over the lumbar region and buttocks. The eruption presented the following appearance. There were tense hemispherical vesicles and blebs of clear serous fluid without any areola, whilst other vesicles and blebs had a pinkish areola. One large pustule on the anterior surface of the right thigh was of about the size of a penny piece. There were also crusts and scabs of a purplish colour discharging a thin purulent fluid. Where former bullæ had appeared there were brownish stains which gave the whole body a dark appearance. There was no rise of temperature and the child's general health was very good. He was dressed in a linen shirt next to the skin as the father said that it was evident that linen irritated the sores less than anything else. Together with the affection of the skin the finger-nails were affected. Several of the nails were very long, curved over the fingers, and quite black in colour. The father said that the child's nails had all been changed many times, the nails falling off after some weeks and being replaced by new ones which in their turn underwent the same change. As the father was unwilling to take the child to the hospital at St. John's and the nearest medical man was twenty miles away by road and our ship had to leave the harbour on the next day there was some difficulty in the question of treatment. The following mixture was ordered to be taken three times a day: 2 minims of arsenical solution, ½ drachm of compound infusion of gentian, and water to 1 drachm. An ointment of boric acid was to be applied locally. The father was instructed to let me know how the child was in a week's time, an instruction which was never fulfilled. I may add that the child had never had any kind of skilled treatment for the disease.

The case is of some interest on account of the chronicity and extensiveness of the disease which had apparently existed for seven years without any improvement.

NOTE ON A LABOUR OBSTRUCTED BY A PELVIC OVARIAN TUMOUR.

By W. GIFFORD NASH, F.R.C.S. ENG.

THE patient, a woman, aged thirty-one years, was pregnant for the sixth time. Her first four labours were easy and the fifth, four years ago, was prolonged, but the medical man who attended her informed me that it was natural. On Sept. 30th, 1898, being from ten to fourteen days overdue at about 7.30 P.M. the membranes ruptured whilst the patient was lying quietly on the sofa. She had had slight pains all day. I saw her at 9.30 P.M. and found the cervix very thick and swollen, but the os was soft and dilateable with the vertex presenting. The pains came on about every five minutes. I saw her again at midnight and found the os in the same condition; the pains were more frequent. Soon after this I detected the cord prolapsed around the vertex but not presenting at the os. I pulled down a loop and found that pulsation had ceased in it. In the genu-pectoral position after a little trouble I succeeded in pushing up the cord and it did not again prolapse. About 2 A.M. I discovered an unusual condition of the posterior vaginal wall. The space between the vagina and the rectum was occupied by a fleshy, wedge-shaped mass, larger above than below. Examination showed that the right part of this was very tender, but the left part which was thicker and more elastic was less tender. During a "pain" the mass became more tense. It lay in the hollow of the sacrum, extending as high as the promontory. With one finger in the rectum and another in the vagina the wedge-shaped character was very evident, also the fact that the mass lay in Douglas's pouch. I came to the conclusion that the right ovary was enlarged and cystic and was impacted in Douglas's pouch, thus preventing the fœtal head from engaging in the brim and dilating the os. Here also was the cause of the prolapse of the cord. I tried reposition—i.e., pushing up the mass—but failed to make any impression on it. I then sent for Dr. G. P. Goldsmith and procured an aspirator. Dr. Goldsmith agreed with the diagnosis. Chloroform was given and reposition was again tried without success. I then aspirated the left half of the mass and drew off 4½ oz. of clear straw-coloured fluid. The main part of the swelling collapsed, leaving the firm part on the right. Forceps were applied and a large stillborn child was delivered. The after-course was perfectly normal. At the end of a fortnight there was no change in the ovary and the patient got up. She is now in her usual health. Anyone interested in the literature of this condition will find a very full and detailed paper by Dr. McKerron in the Transactions of the Obstetrical Society of London for 1897.

Bedford.

A Mirror
OF
HOSPITAL PRACTICE,
BRITISH AND FOREIGN.

Nulla autem est alia pro certo noscendi via, nisi quamplurimas et morborum et dissectionum historias, tum aliorum tum proprias collectas habere, et inter se comparare.—MORGAGNI *De Sed. et Caus. Morb.*, lib. iv. Proœmium.

ROYAL FREE HOSPITAL.

A CASE OF RUPTURED MESENTERIC ARTERY; LAPAROTOMY; RECOVERY.

(Under the care of Mr. E. W. ROUGHTON.)

LACERATION of a mesenteric artery unaccompanied by any other abdominal injury is a rare lesion and very few instances have been placed on record. Two cases were reported by Mr. Marmaduke Sheild in a paper read before the Medical Society of London[1]; in one of them the jejunum was also ruptured and the patient died, but in the other case recovery followed the ligature of the torn vessel. A noteworthy point in the operation recorded below is the benefit which resulted from the continuous infusion of saline solution. Although the injection of saline fluid is much more extensively employed at the present time than formerly it is still not used on many occasions in which it might prove of signal benefit.

A railway porter, twenty-one years of age, was caught between the buffers of two railway trucks on Oct. 7th, 1898, at 11 A.M., and was admitted into the Royal Free Hospital about half an hour afterwards. He was much collapsed, but on examination no external marks of injury were discovered. The abdomen was very rigid and tender but nothing definite could be made out. At 4 P.M. he appeared to have rallied somewhat from his collapse but still an examination of the abdomen revealed nothing. At 8 P.M. Mr. Roughton saw him again and found that he was decidedly worse, the pulse being very weak and the patient's condition being that of extreme collapse. Mr. Roughton decided to perform a laparotomy, as it was evident that some serious abdominal lesion was present. Chloroform was therefore administered and as soon as the patient was under the influence of the anæsthetic the median basilic vein was opened and saline solution (1 drachm to the pint) was infused by means of a funnel and tube. This was continued throughout the operation, the quantity injected being regulated by the condition of the pulse. In all two pints of fluid were infused.

The abdomen was opened in the middle line by an incision 5 in. long and when the peritoneum was divided a large quantity of blood escaped. The liver and spleen were examined but were found to be uninjured and the blood continued to well up from among the coils of the small intestine. After a few minutes' search it was discovered that one of the vasa intestini tenuis was torn across close to its origin from the superior mesenteric artery. The proximal end had become occluded but the distal end was bleeding freely. Both of the ends were tied and the abdominal cavity was sponged out. No other bleeding vessel was

[1] Practitioner, November, 1898, p. 474.

found and no other lesion, so the abdomen was then closed. The operation lasted twenty-five minutes and at the end of it the patient's condition was as good as at the beginning. His recovery was absolutely uneventful and he was discharged from the hospital four weeks later.

Remarks by Mr. ROUGHTON.—It is remarkable that a large thing such as the buffer of a railway truck should make a small hole in the mesentery and rupture a single vessel without inflicting any discoverable injury on any other portion of the abdomen. The symptoms were those of internal hæmorrhage. Before operating I thought that the case would prove to be one of ruptured liver or spleen. I was somewhat nonplussed when I found that these viscera were uninjured. My finding the torn vessel was simply a piece of good luck; I might very easily have failed to discover the source of hæmorrhage. The amount of blood which escaped from the abdomen was very great. At the end of the operation the patient was lying in a pool of blood on the table and I was standing in a pool of blood on the floor nearly three feet in diameter. I cannot help thinking that the patient would have died from hæmorrhage had he not been infused with saline solution *during* the operation. As fast as the blood ran out from the abdomen saline fluid was injected into his arm so that the blood-pressure was kept sufficiently high to enable the heart to continue beating.

STANLEY HOSPITAL, LIVERPOOL.

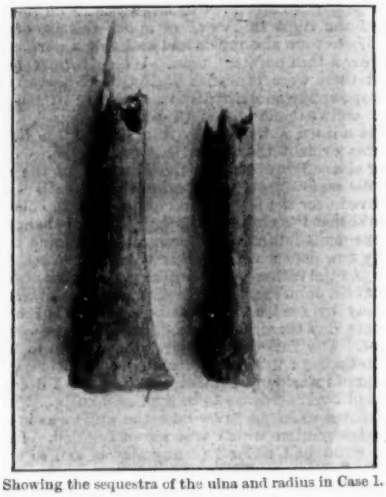
TWO CASES OF RARE COMPOUND FRACTURES.

(Under the care of Mr. DOUGLAS CRAWFORD.)

IN the first of the two cases printed below the rare lesion of separation of the lower epiphyses of both radius and ulna occurred. Separation of the lower epiphysis of the radius is more commonly accompanied by fracture of the ulnar styloid process or of the ulnar diaphysis than by separation of the lower epiphysis of that bone.[1] The frequency with which the separation is compound is to be explained by the intensity of the force which is required to produce this injury. In nearly all the cases which have been recorded the injury was due to a fall from a height. When we consider the difficulty which always exists in making aseptic such a wound we need feel no surprise at the large proportion of these cases which have died from septic causes. In THE LANCET of Nov. 10th, 1898, p. 1326, we published a case of separation of the lower epiphyses of both bones of the forearm which proved fatal from tetanus. The second case recorded below is very striking and we are inclined to agree with Dr. Robinson that it is possibly unique. For the notes of the cases we are indebted to Dr. Burton Robinson.

CASE 1. *Compound diastasis of the lower radial and ulnar epiphyses.*—A boy, aged fifteen years, was admitted into the Stanley Hospital on Sept. 13th, 1898. He had fallen off a wall 8 ft. in height and sustained a compound diastasis of the lower radial epiphysis, a diastasis usually replacing a Colles's fracture in subjects below twenty years of age. In his fall the patient alighted on the ground on the palm of his right hand. The resultant of the vertical and horizontal forces formed by the weight of his falling body, acting from above and behind, on the fixed and over-extended hand was the separation of the above-named epiphyses. The hand and carpus with the epiphyses attached were displaced backwards as in a Colles's fracture, producing marked deformity. The lower extremity of the upper radial fragment ploughed up the superficial and deep flexor muscles and tendons of the forearm, lacerated and contused the median nerve, and protruded through the skin to the extent of 1½ in. and was denuded of its periosteum for 3½ in. Under anæsthesia the diaphysis was reduced with great difficulty owing to the displaced tendons embracing the fragment and being displaced posteriorly to it. The ulnar upper fragment did not penetrate the skin, but subsequently was exposed owing to the contused and lacerated tissues becoming gangrenous in front of the wrist. Extensive sloughing of muscles and tendons followed, with necrosis of the lower portions of the shafts of the radius and ulna, the sequestra from which are well shown in Fig. 1. Twenty-seven days after the accident, whilst suppuration and granulation were proceeding, severe secondary hæmorrhage occurred owing to septic arteritis of the ulnar artery. Ligation of the brachial artery in the middle of the arm proved successful in arresting this danger. Nineteen days after ligation of the brachial artery—i.e., 46 days after admission—the necrosed lower ends of the radial and ulnar diaphyses were easily removed by forceps, leaving two corresponding sinuses lined by granulation tissue. The granulation tissue on the dorsal aspect of the sinuses formed from the posterior periosteum was undergoing ossification. This ossification has now proceeded as far as to enable the patient to hold his hand horizontally. There is very slight power of flexion of the fingers, principally from the last phalanges, and the sensibility of those parts of the hand and finger supplied by the median is evident but localisation is defective. These points lead one to look forward to further improvement with the lapse of time.

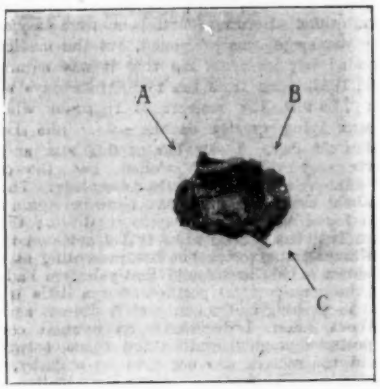
FIG. 1.



Showing the sequestra of the ulna and radius in Case 1.

CASE 2. *Compound fracture of the semilunar bone.*—A man, aged thirty-one years, was admitted into the Stanley Hospital on Sept. 24th, 1898. Whilst seeking a point of vantage from which to view the football match between Everton and Liverpool at Goodison Park the unfortunate man fell from a height of about 16 ft. on to a cinder track. He sustained a compound fracture of the left humerus about the middle of the shaft and a compound fracture of the left semilunar bone (Fig. 2). Two-thirds of the semilunar bone along with the cuneiform bone attached to the lower

FIG. 2.



Showing the fractured surface of the semilunar bone in Case 2. A, cuneiform bone. B, semilunar bone. C, fractured surface of semi-lunar bone.

[1] J. Poland: Traumatic Separation of the Epiphyses, p. 504.

end of the radius protruded through the transversely lacerated skin in front of the wrist. For this to have occurred there must have been extreme extension of the carpus and hand. The tissues were inground with cinders and ashes. Under chloroform the protruding cuneiform bone and the fragment of the semilunar bone were removed, and the radius was returned and the cavity in the carpus was drained. Acute septicæmia supervened and death occurred on the twelfth day after the accident.

Remarks by Dr. ROBINSON.—The infrequency of compound diastases in general and the very bad results at this particular seat make Case 1 worthy of record. Of the separation of epiphyses from traumatism perhaps that of the lower radial is most common. Of 54 recorded cases of separation of this radial epiphysis 10 were compound. Death from pyæmia and tetanus, or amputation, is well represented in these 10 cases. Those patients apparently did best in whom resection was performed for reduction.[2] In Case 1 resection would not have saved more of the diaphyses which were so extensively stripped of periosteum as to necrose to the extent of 3 in. Case 2 was less fortunate than the previous one but it was perhaps unique. The semilunar bone snapped across its concavo-convex portion antero-posteriorly leaving a thin layer attached to the scaphoid bone. The scaphoid bone was not displaced. The head of the os magnum may have wedged asunder the bone or the osseous tissue of the semilunar bone may have given way before the strength of the scapho-semilunar ligaments. Why a Colles's fracture was not produced rather than that which actually occurred remains unexplained. I can find no mention of a similar fracture and doubtless it is a rare experience. I am indebted to Mr. Douglas Crawford for permission to publish the cases and to Mr. Heywood Hadfield for the photographs from which the illustrations are reproduced.

ROYAL INFIRMARY, NEWCASTLE-UPON-TYNE.

MR. RUTHERFORD MORISON'S CASE OF EXCISION OF THE SPLEEN FOR INJURY.

THE following description of the excised organ should have been added to the report of Mr. Rutherford Morison's interesting case of Excision of the Spleen for Injury published in the Mirror of Hospital Practice in THE LANCET of Jan. 7th.

The spleen measured 12·5 cm. in length and 9 cm. in breadth. It weighed 248 grains. Two obvious lacerations presented the following features. The first began 3 cm. below the upper extremity of the organ on the external surface when it extended for 2 cm. and involved the whole substance for practically that distance. On the internal surface this tear passed horizontally inwards for 3 cm. and then obliquely downwards and inwards to terminate in front of the hilum. The total extent on this surface was 5·5 cm. and its average depth was equivalent to half the thickness of the spleen. The second laceration commenced at the anterior border 11 cm. below the upper extremity of the spleen and passed along the whole breadth of the outer surface with a slight upward inclination. Though shallow, for the most part amounting to little more than a stripping of the capsule, here and there it extended to a depth of ½ cm., while at the posterior border the laceration involved the entire substance for 1¼ cm. On the inner surface it passed horizontally to the hilum and was 0·75 cm. in depth. Above and below the actual laceration on this surface the capsule was stripped over two quadrilateral areas of about 6 square cm.

[2] Treves's System of Surgery, vol. i.

SOMERSET COUNTY COUNCIL.—At the meeting of the Somerset County Council held on Jan. 3rd after a long discussion it was decided by 42 votes to 20 not to adopt the recommendation of the committee which had reported in favour of the appointment of a county medical officer of health.

MEDICAL OFFICER OF HEALTH OF DORSETSHIRE.—It is stated that 70 applications have been received for the post of medical officer of health of Dorset. About 6 of these candidates have been selected to appear before the County Council at the February monthly meeting. The salary is £500 per annum.

Medical Societies.

ROYAL MEDICAL AND CHIRURGICAL SOCIETY.

Aortic Aneurysm as a Cause of Hypertrophy of the Left Ventricle.—Aortic Aneurysm causing Sudden Paraplegia.

A MEETING of this society was held on Jan. 10th, the President, Mr. BRYANT, being in the chair.

Dr. JAMES CALVERT read a paper on Aortic Aneurysm as a Cause of Hypertrophy of the Left Ventricle. Dr. Calvert said that this was a subject on which there was conflict of opinion, some authorities stating that aortic aneurysm certainly was a cause of hypertrophy of the left ventricle, others being equally positive that it was not. This conflict of opinion was embarrassing to the teacher and very confusing to the student. Therefore Dr. Calvert had thought it worth while to see what light the post-mortem records of St. Bartholomew's Hospital threw upon the subject and the research had been made a comparatively light task by Dr. Oswald Browne's recent work entitled "Aneurysms of the Aorta."[1] Dr. Browne's thesis was based "upon an analysis of all cases of aneurysm of the aorta in any of its parts dying in St. Bartholomew's Hospital during the last thirty years, upon whom an examination was made after death and its results carefully recorded." The result of Dr. Calvert's research was briefly that with regard to 124 cases of aneurysm of the arch of the aorta in 68 of them there was no hypertrophy of the left ventricle, in 47 of them the hypertrophy could be perfectly explained by other causes present, and in 9 of them the hypertrophy could very probably be explained by other causes present. Therefore, so far as the records of St. Bartholomew's Hospital are concerned, there was practically no evidence in favour of aortic aneurysm being a cause of hypertrophy of the left ventricle.—Dr. LAZARUS-BARLOW said that the records of St. George's Hospital for the last two years entirely bore out Dr. Calvert's conclusions. Out of 13 cases of aneurysm of the ascending or transverse arch of the aorta it was expressly noted in 8 that there was no hypertrophy, and in the 5 cases in which it was present it was accounted for by aortic regurgitation or granular kidney. In his "Manual of Pathology" he had stated that hypertrophy of the left ventricle would not be expected unless the case was complicated by the presence of a lesion of the aortic valves. He doubted whether atheroma of the aorta by itself would cause hypertrophy except in the very rare cases where it gave rise to some stenosis, but arterial sclerosis affecting the smaller arterioles was a frequent cause.—Dr. A. MORISON said that he had been impressed for a long time with this absence of hypertrophy and mentioned the case of a large saccular aneurysm of the arch in a woman in whom there was no hypertrophy and no sign of strain of the valves. He observed that the coronary arteries relieved the strain on the valves in the normal condition, and if they were stenosed through atheroma this relief would be less effective.—Dr. TURNEY said that he looked on the elastic recoil of the aorta as a kind of second systole and therefore would have expected that loss of this would throw more work on the heart and lead to hypertrophy. But Dr. Calvert's observations appeared to be conclusive, and he mentioned in confirmation of them the case of a man, fifty years of age, in whom the presence of an aneurysm was said to have been diagnosed sixteen years before death. At the necropsy an enormous fusiform aneurysm was found eroding the lower dorsal vertebræ, partly filled by firm laminated clot leaving a channel in the centre about the calibre of the normal aorta. In this case, although of such long standing, there was no hypertrophy of the heart.—Dr. SEYMOUR TAYLOR would have liked more information as to how this absence of hypertrophy was to be accounted for He thought that he had met with hypertrophy as a result of aneurysm. He agreed with Dr. Turney that normally the elastic recoil supplemented the systole of the heart. In fusiform aneurysm the elastic element was overstretched and this assistance was lost. He asked how far aneurysm was to be looked

[1] Aneurysms of the Aorta. By Oswald A. Browne, M.A., M.D. (London: H. K. Lewis, 1897.)

on as primary affection. He thought that it might occur secondarily to hypertrophy of the ventricle in men who were accustomed to great muscular exertion.—Mr. PAGE said that he had formerly seen much of the work of the late Dr. H. G. Sutton and he recalled that he insisted on the fact that aneurysm did not cause hypertrophy of the ventricle.—Dr. ROLLESTON thought that aortic aneurysm was nearly always due to atheroma, and not to increased strain as by high arterial tension, &c. He did not think that simple hypertrophy would give rise to aneurysm, as suggested by Dr. Taylor, unless there was pre-existing disease of the coats.—Dr. H. A. CALEY asked as to the frequency of syphilis among the patients. Was syphilis more common among the younger patients and arterio-sclerosis among the older ones?—Dr. NORMAN MOORE entirely agreed with Dr. Calvert. He insisted that the methods of examination should be exact. The presence or absence of hypertrophy could only be satisfactorily settled by weighing the heart, and arterio-sclerosis could not be excluded unless the kidneys had been microscopically examined.—Dr. CAUTLEY said that the weight of the patient should also be recorded to compare with the weight of the heart in order to form an accurate measure of the hypertrophy. He thought that atheroma was the effect rather than the cause of increased tension. A little outward displacement of the apex beat did not necessarily indicate hypertrophy, as it might be due to mechanical displacement of the heart by the aneurysm.—Dr. CALVERT, in reply, said that he looked on atheroma as an indication of high tension and that the latter gave rise to hypertrophy. If the atheroma gave rise to definite roughening of the coats there might be some obstruction to the flow of blood.

Dr. H. G. TURNEY and Mr. C. A. BALLANCE related a case of Aortic Aneurysm in which there was involvement of spinal sensory nerve roots, and sudden paraplegia for which laminectomy was performed. The patient was a man, aged thirty-five years, who was admitted to St. Thomas's Hospital on Sept. 14th, 1897. He had had a hard chancre seventeen years before admission. Two years before he began to suffer from pain in the middle of the back of an aching character, not constant at first but becoming so later. It soon extended round his body at the same level. For the last four months the pain had been continuous and severe; movement had no effect upon it. Morphia had been necessary to relieve it, and he had lost 2 st. in weight during the four months before his admission. On admission he was seen to be a powerfully-built man, but he was thin, and he had a well-marked expression of pain on his face. He complained in a wailing voice of intense pain in the upper abdomen and back. There was no loss of power or affection of sensation in the extremities. All the reflexes were normal. His mental condition was clear. He referred his pain to a triangular area situated between the fifth rib and the ensiform cartilage on the right side in front. The skin in this area was intensely hyperæsthetic with well-defined borders; a similar condition had been present in the corresponding triangle on the left side, but this part was normal at the date of admission. The rigidity of the back at once attracted attention; it was more marked in the upper half of the spine. There was also a distinct deformity; the site of maximal projection was occupied by the seventh and eighth dorsal spines. The tenth spine was extremely tender. There was no sign of visceral disease in either chest or abdomen. Antispecific treatment was adopted, but without change in the patient's condition. On Oct. 11th the hyperæsthesia was transferred to the left side and there was some difficulty in swallowing solid food. On Oct. 23rd, while the patient was being washed in bed, he called out with intense pain and instantaneously lost power and feeling in his legs. The paraplegia remaining unaltered on the following morning laminectomy was performed. The body of the seventh dorsal vertebra was found to have completely disappeared, its place being occupied by recent clot. The finger was passed into the clot and no hæmorrhage occurred. Death took place ten hours after the operation. At the necropsy a large aneurysm was found arising from the descending aorta on its posterior aspect, situated exactly in the middle line and causing destruction of both vertebræ and intervertebral discs from the sixth to the ninth dorsal. The diagnosis was believed to rest mainly between aneurysm, caries, and new growth, but no final conclusion seemed to be possible even at the operation. The remarkable features of the case were: (1) the insuperable difficulties in the way of a correct diagnosis; (2) the passage of the finger into an aortic aneurysm without hæmorrhage; (3) the localisation of certain sensory areas; and (4) the unusual destruction of the intervertebral discs equally with the vertebral bodies from pressure.—The PRESIDENT asked for the exact reasons for operating, as the diagnosis before the operation seemed to be that there was a growth? He said that he had no faith in the hot sponge as a test of caries.—Mr. PAGE thought that the clinical history seemed to suggest that rupture of the aneurysm might have been the cause of the sudden paraplegia. He agreed with the President as to the worthlessness of the hot sponge test.—Dr. TURNEY, in reply, said that at the time of the operation the diagnosis was not clear and laminectomy was performed to relieve pressure on the cord. This was so far successful that the lower intercostal muscles which had been paralysed before the operation resumed their function.

MEDICAL SOCIETY OF LONDON.

The Conduct of the Heart in the Face of Difficulties.

A MEETING of this society was held on Jan. 9th, the President, Mr. EDMUND OWEN, being in the chair.

The PRESIDENT proposed that a letter of condolence should be sent to the relatives of the late Dr. Hare, who had been a Fellow of the society since 1850, Lettsomian Lecturer in 1861, and President in 1866.

Sir WILLIAM BROADBENT read a paper on the Conduct of the Heart in the Face of Difficulties. He said that he had taken this subject at the request of the President who had asked him to deal with the behaviour of the heart itself as well as its management by the physician. Sir William Broadbent said that many of the difficulties of the heart were not of its own making but were imposed on it from outside, as by pressure of a dilated stomach, of a pleural effusion, or of an aneurysm. In other cases the difficulty was due to peripheral resistance, as in cases of high arterial tension. If pressure were gradual the heart suffered little embarrassment, beating, for example, with fair force when so much displaced by a left pleural effusion that the apex beat was felt under the right nipple. But a sudden displacement by the occurrence of pneumothorax or rapid dilatation of the stomach was attended by great embarrassment and dyspnœa. Probably flatulent distension of the stomach caused in the mass more suffering than actual heart disease. The heart had special relations with both the cerebro-spinal and sympathetic systems and in some individuals owing to undue nervous excitability mental or emotional excitement or even indigestion gave rise to disproportionate reflex effect on the heart. When there was pain it was often difficult to diagnose whether it was due to external causes or not. The absence of physical signs would help, but even where there was some valvular lesion flatulent distension might be responsible for the pain. Even angina might be simulated, but that at first came on with exertion, while the spurious form came on during repose. A weak heart might even be brought to a standstill. In women angina pectoris was almost always spurious. If any symptom could be "walked off" it might be put down as functional, as might be an intermittence of the pulse of which the patient was conscious. Patients with functional derangements of the heart often to their own hurt made them an excuse for avoiding exercise and for taking stimulants. One of the most common difficulties was due to high arterial tension. This was apt to give rise not only to salutary hypertrophy but to increase of fibrous tissue which afterwards might degenerate, the valves in some cases suffering before the heart muscle. It should be remembered that digitalis, by constricting the arterioles, raised the tension and might increase the strain. With regard to the difficulties in the case of valvular disease the first thing was to ascertain the amount of mitral regurgitation or of aortic constriction. If there was no accentuation of the pulmonary second sound there was no need to interfere with the patient's mode of life. If there were no dyspnœa but there was good compensation nothing need be done, but the patient must be warned that any sudden or excessive exertion might cause a break-down. But in cases where there was mitral regurgitation with enlargement of the liver and anasarca and scanty and albuminous urine, the first thing was to relieve the right side of the heart. There was nothing which relieved the heart so marvellously as venesection, but in these degenerate days it was difficult to employ it. As an alternative six or eight leeches might be applied over the

enlarged liver. Either should be followed by a smart purge. When the right side had been relieved digitalis might be given with excellent effect. The anasarca might be relieved by Southey's tubes and the pleura should be aspirated early. The principle of treatment was to get rid of the difficulties rather than to urge the heart on to more violent efforts to overcome them.

The PRESIDENT asked whether when Sir William Broadbent spoke of these degenerate days he referred to patients or to practitioners.

Dr. A. E. SANSOM said that he was entirely in agreement with Sir William Broadbent's contentions. He remarked on the extreme tolerance of the heart muscle. A case had even been recorded in which it was alleged that a wound of the right ventricle had been successfully sutured and another in which a bullet was found embedded in the heart muscle of a man aged seventy years where it had lain for a long time without causing inconvenience. He thought that perhaps too much importance was attached to the muscle itself. The most extreme fatty degeneration was seen in cases of anæmia and yet if the anæmia in those cases had been relieved no doubt the fatty degeneration would have passed off. The nervous relations were of even greater importance than the condition of the muscle. He protested against the routine administration of digitalis in heart disease and suggested that the abuse of cardiac tonics was sometimes responsible for sudden death in patients suffering from valvular heart disease.

Dr. THEODORE WILLIAMS mentioned a case in which from distension of the stomach the patient became actually livid and apparently in great danger. The relief of the flatulence led to almost complete disappearance of the symptoms. The neuroses of the heart were very difficult to treat. He mentioned a case which he believed to have been one of spurious angina in which the attacks alternated with attacks of asthma. The patient ultimately died suddenly. As to the tolerance of the heart muscle he related the case of a child who ran a needle into the chest through the intercostal space, apparently wounding the heart. It was removed by Sir John Erichsen and there were no symptoms. In another case of which he knew a man was wounded by an assegai in the heart and did not get surgical attention for half an hour, but he made a perfect recovery.

Dr. ALEXANDER MORISON asked whether Sir W. Broadbent still held to his belief in the occurrence of non-synchronous action of the ventricles. He quoted a case showing the rapid therapeutic effect of strophanthus and nux vomica in a case of ascites and anasarca complicated with albuminuria and diabetes. He remarked that the three factors of the functional activity of the heart—nerves, muscle, and blood—must not be dissociated. He agreed about venesection and said that the smallest quantity which should be taken away should be 4 oz.—a "heartful of blood."

Dr. SYMES THOMPSON said that in functional disorders there was a great tendency for the patient to exaggerate his troubles and possibly for the medical man to under-estimate the amount of distress. He quite agreed that in cases of heart embarrassment the important thing was to diminish its labour. The late Sir George Johnson taught that in cases of acute kidney trouble it was wrong to stimulate the kidney, but it should be relieved of some of its work, and the same was true of the heart. Venesection or a mercurial dose followed by a saline purge should precede the employment of cardiac tonics.

Dr. R. MAGUIRE thought that one of the causes of difficulty was variation in the negative intrathoracic tension. In emphysema the amount of dyspnœa was often out of proportion to the extent of lung disabled and might be due to lessened excursion of the chest wall and less suction action. He thought that the pulsus paradoxus could be ascribed to increase of this negative pressure. In most people it could be produced by throwing the shoulders back and taking a gasping inspiration. Probably many intermittent pulses where one beat was missed in five were really instances of pulsus paradoxus produced in this manner.

Dr. CALVERT said that senega was often employed in mixtures as a "stimulant expectorant." It was, however, a cardiac depressant and if as much of the active principle as would be taken by a man in the day were injected into a cat it would die at once from cardiac failure. It had the further disadvantage that it was a decided irritant to the stomach.

Dr. ROBERT JONES asked whether toxins formed in the body could have any direct effect on the heart. He mentioned a case in which there was great rise of pulse-rate during the status epilepticus, and subsequently acute fatty degeneration of the heart muscle was found.

Dr. H. A. CALEY asked whether the heart failure in cases of high arterial tension and dilatation of the stomach might not be due to a toxæmic condition and as to whether interference with the coronary circulation leading to disturbance of the nutrition of the heart wall might not be one of the important factors.

Sir WILLIAM BROADBENT, in reply, said that in the case of dilated stomach the mechanical nature of the interference with the heart's action was proved by the immediate relief which followed eructation. He thought that there was nothing to compare with venesection in severe cases and would take not 4 but 12, 16, or even 20 oz. and sometimes would repeat it. As illustrating the tolerance of the heart muscle he mentioned a case in which a needle, probably introduced in early childhood, was found transfixing the septum ventriculorum. He did not think that the fatty degeneration found in cases of anæmia was of the same nature as that found when there was blocking of the coronary arteries. In the latter the muscle was much more soft and friable. He mentioned a case in which a man consulted him suffering from cardiac embarrassment associated with dilatation of the stomach. Instead of going to bed he took a journey, ate a heavy dinner, and died almost immediately after. He still thought that in cases in which all the heart beats did not reach the wrist there was non-synchronous action of the ventricles. When there was a systolic murmur present it was only audible with the beat which reached the wrist. In one case where a thrombus was subsequently found in one of the ventricles only one beat in five reached the wrist. He attributed the cessation of the pulse when a gasping inspiration was taken, as mentioned by Dr. Maguire, to suction on the left auricle preventing the ventricle from filling.

OBSTETRICAL SOCIETY OF LONDON.

Ectopic Gestation.—Vulvar Discharges in Children.—Exhibition of Specimens.

A MEETING of this society was held on Jan. 4th, Dr. C. J. CULLINGWORTH, President, being in the chair.

Dr. ARCHIBALD DONALD read a paper on a case of Ectopic Gestation at the Seventh Month in which the Fœtus was Extracted by Vaginal Incision. The patient, aged thirty-three years, was admitted to St. Mary's Hospital, Manchester, on July 20th, 1898. She had been married about a year and had been regular till Jan. 20th. In February she had a slight discharge which in March existed continuously for three weeks. On admission the abdomen was uniformly enlarged by a tumour which reached about four inches above the umbilicus. A loud souffle was distinctly heard. The cervix was close to the pubes and the uterus could be mapped out bimanually in front and to the left and seemed of about the size of a two months pregnant uterus. The posterior vaginal fornix was bulged by a hard mass which almost filled the brim; this mass was the fœtal head in which the sutures could be felt. On August 18th, 1898, abdominal section was performed and the placenta was exposed. The wound was therefore temporarily covered and the child was delivered through a posterior vaginal incision by cranioclasm and the sac packed from the vagina with iodoform gauze. Alarming hæmorrhage occurred when the gauze was removed on the fourth day. The separation of the placenta occupied some weeks, but the patient made a good recovery and was discharged strong and well on Nov. 12th. The author described the position of the fœtus in the broad ligament and discussed the advantages of the vaginal route.—Dr. GALABIN said that in intra-ligamentous pregnancy the vaginal methods of operating when practicable secured several advantages obviating the necessity of stitching the sac to the abdominal wall, and any temporary sinus caused little inconvenience. In several cases of extra-uterine gestation of shorter duration than [illegible] months he had adopted the plan followed by Dr. Donald of making an exploratory abdominal section and, if the case proved to be one of intra-ligamentous pregnancy unruptured or if the pelvis was completely shut off by adhesions, opening the sac per vaginam. The advantage of abdominal exploration was shown in one case where the sac had been ruptured and a

large quantity of blood was effused into the peritoneal cavity. He had removed the placenta in one case through the vaginal incision three days after the operation and the patient rapidly convalesced.—The PRESIDENT said that Dr. Donald could already lay claim to be considered as a pioneer in the treatment of early ectopic gestation by operation through the vagina and he had now brought before the society a case of advanced ectopic gestation treated by the same method. Dr. Herman had collected several instances in which in the years gone by an extra-uterine fœtus had been extracted through an opening in the vaginal roof, but Dr. Donald by opening the abdomen had completed and made certain the diagnosis and had thus made himself master of the situation. He (the President) asked if any opinion had been formed as to the source of the hæmorrhage?—Dr. DONALD, in reply, said that Dr. Walls who was responsible for the after-treatment of the case believed that the hæmorrhage came from a placental vessel. Though he had not discussed in his paper early tubal pregnancy he (Dr. Donald) expressed the opinion that the vaginal incision was safer than the abdominal in early cases—i.e., up to the third month.

Dr. DRUMMOND ROBINSON gave the results of his investigation of 50 cases of so-called Vulvitis in Children. The condition was found to be most common in children under five years of age, common between the ages of five and ten years, and uncommon in children who were over ten years of age. In 41 of the cases (76 per cent.) the pus cells of the discharges contained cocci which presented characters which, as far as is known, are peculiar to the gonococcus of Neisser. The contagious character of the discharge was illustrated by several cases. The chief symptoms were painful micturition and pruritus vulvæ; occasional complications were ophthalmia, peritonitis, and arthritis. In most cases the inflammation appeared to be superficial to the hymen. Dr. Robinson expressed the opinion that the majority of cases of vulvitis in children were probably gonorrhœal in origin.—Dr. BOXALL said that it seemed to him remarkable, if the whole of the 41 cases were to be regarded as gonorrhœal, that only 1 showed evidence of conjunctivitis.—Dr. SNELL said that he had seen several cases of vulvitis in children occurring in families where in all probability gonorrhœal infection was impossible. The subjects were usually weakly but the complaint was easily and quickly cured.—Dr. A. ROUTH thought that though at present these diplococci were indistinguishable from gonococci it would be found that they were not really identical. He thought that vaginitis might be caused by infection from the vulva during incautious examinations.—The PRESIDENT said that Dr. Robinson's paper was important from the scientific and from the practical medico-legal aspects. He asked whether by culture experiments Dr. Robinson had confirmed the diagnosis? He called attention to a paper published in 1859 by the late Sir W. Wilde on some medico-legal aspects of purulent discharge in children. In Dr. Robinson's cases pain on micturition was recorded as a common symptom; might not this be due to the inflamed state of the vulva and not to urethritis which was not an essential feature in acute gonorrhœa in the female? Vaginitis was comparatively rare in the gonorrhœa of the adult.—Dr. HANDFIELD-JONES found it difficult to believe that over 70 per cent. of all vulvar discharges in children depended on gonorrhœal infection. The following points seemed to him to render the gonorrhœal theory doubtful: (1) the disease had not spread to neighbouring tissues; (2) it was readily cured; (3) the inguinal glands were rarely enlarged; (4) the disease was common in delicate children and rare in the robust; and (5) in undoubted infection by rape the disease was much more severe than in ordinary cases of vulvitis.—Dr. ROBINSON, in reply, stated that he did not think that the absence of vaginitis in these cases was an argument against their gonorrhœal nature as vaginitis was rare in gonorrhœa in the adult. He did not agree with Dr. Handfield-Jones that most of these children were sickly; on the contrary, they were generally in excellent health. Absence of enlargement of the inguinal glands and the ease with which the disease was cured showed that the disease differed from that in adults. His views were based not on the clinical aspects of the cases but upon bacteriological investigation.

The following specimens were shown:—

Dr. LEA: A Uterine Tumour expelled during delivery.

Dr. ADDINSELL: Microscopical Sections of an Ovary and Tube removed for the relief of intermenstrual pain.

Dr. AMAND ROUTH: Early Pregnancy in the Uterus of a bitch.

Dr. BOXALL: Dermoid Tumours of both Ovaries.

HARVEIAN SOCIETY OF LONDON.

Formation of Adhesions in the Joints, the Peritoneal Cavity, and Elsewhere.

A MEETING of this society was held on Jan. 5th, Dr. ROBERT BOXALL being in the chair.

Mr. HOWARD MARSH read a paper entitled, "On the Subsequent History of Cases in which Adhesions have formed in the Joints, the Peritoneal Cavity, and elsewhere." He remarked that adhesions were identical with the new connective tissue formed to repair wounds and were apt to result under various circumstances when the tissues were maintained in a condition of irritation. Their extent and firmness depended on the activity and duration of the inflammatory process in which the parts concerned were involved. One of the chief laws regulating the production of new tissue in the healing of wounds was that of conformity to type. In other words, new material served the purpose of, as far as possible, restoring structures to their typical or original state. To this end in an aseptic wound only just so much as was required was produced. But when the tissues were maintained in a condition of inflammation new material was organised in superfluous amount and in such parts as the joints and the peritoneum accumulated in the form of adhesions. Such adhesions, however, played no part in the restoration of the structures to their typical condition. On the contrary, they were abnormal and while they remained true or complete repair—that is, restitution to type—could not take place. Before repair could be perfect they must be got rid of, just as the superfluous callus (termed temporary) formed in the repair of a fracture was removed. Now this result was provided for. Undoubtedly adhesions if not too extensive and firm tended to be absorbed. This result, though often met with in the joints, was most obvious in the peritoneum. Many cases had been met with in which after pelvic cellulitis or tuberculous peritonitis extensive adhesions completely disappeared. A typical case was related. A middle-aged woman, after peri-uterine inflammation, suffered so much pain and flatulent distension, accompanied by attacks of constipation and vomiting, that an exploratory laparotomy was performed, when it was found that the intestinal coils were so extensively and firmly matted together that nothing could be done. The patient, however, gradually improved. Two years later laparotomy was undertaken for the removal of an ovarian cyst. It was then observed that almost every trace of adhesions had disappeared. Now the existence of this strong natural tendency to the absorption of adhesions—like the absorption of temporary callus—was a very important fact in respect both to prognosis and the management of clinical cases. It was, indeed, the key to the treatment of many joints whose movements were restricted by adhesions, either in their interior or in the surrounding parts. In this connexion cases must be systematically divided into three groups in the order of their severity. In the first group, where adhesions were the result of inflammation neither severe nor prolonged, such adhesions as were developed soon spontaneously disappeared and the joint regained its free range of movement. In the second, in which inflammation had been more active and prolonged, the adhesions were so extensive and firm that unless surgical interference was adopted they remained and rendered the joint permanently stiff. Here it was necessary to manipulate the joint under an anæsthetic so that the adhesions were ruptured; and to follow this proceeding up by the use of passive movements and massage. Under this method of treatment absorption would occur. The third group included cases in which as the result of acute inflammation extending over some weeks the structures of the joint had been destroyed and replaced by very extensive and firm adhesions so that the joint was virtually converted into a scar. In such cases manipulation could do no good. The scar might of course be torn through but the only result would be that as soon as the scar re-formed the loss of movement would be more complete than ever. In practice, before treatment could be determined upon, it was obviously necessary to ascertain to which group the particular case in hand belonged. This could generally be done by

taking into account the cause of the inflammation in which the joint had been involved, the degree and duration of the inflammatory process, and the present symptoms. In cases of traumatic inflammation not severe and not of long duration and now unattended with heat and pain movement would probably be restored as soon as the joint was gently exercised. In the second group the same favourable result would follow manipulation, massage, hot douching, &c. It was this group in which formerly so many oversights had occurred in surgical practice and so many cases had been put right by the rough-and-ready wrenchings of the bone-setter. Nor were such oversights even yet entirely ancient history. In the third group, typical of which were joints which had been involved in septic inflammation following parturition and some of the forms of gonorrhœal arthritis, the joint was a mere scar and manipulation was perfectly useless and not a little dangerous. In the great majority of tuberculous cases at whatever stage manipulation was not advisable or even safe. In conclusion, Mr. Marsh gave a warning as to massage. In every case in which this method was ordered the surgeon should give precise directions and closely supervise the manner in which they were carried out. He had met with not a few instances in which cases handed over for massage had either, as a mere matter of commerce or ignorantly, although quite conscientiously, been greatly over-treated and some severely injured. In the keen competition of the present day not only had massage been sometimes carried too far and even degraded to vile purposes, but it and other methods, good in themselves when duly supervised, had been exploited on a commercial basis and worked by limited liability companies. Doubtless the public had a full right to please themselves. It was, however, necessary under the circumstances that surgeons should study cases under their care as fully as possible and critically discriminate between various groups, and that they should take care into whose hands, whether for massage or any other form of treatment, they, so far as they were responsible, allowed their cases to pass. Many a wolf with a sheep's skin on its back was the embodiment, in the credulous eyes of the public, of an angel of light.

Mr. ALBAN DORAN observed that they did not know how far the endothelium in serous and synovial membranes was destroyed by inflammation nor how far it was capable of repair. Destruction of the endothelium greatly facilitated the formation of firm adhesions. Delbet had shown in the thirty-fifth volume of the *Annales de Gynécologie* that rough handling and antiseptic solutions damaged or destroyed the endothelium of the peritoneum. In septic inflammation of a serous membrane the tissues which renovated the endothelium were probably destroyed. On the other hand, long-standing tuberculous peritonitis seemed far less destructive, as Mr. Marsh had noted in tuberculous disease of joints. Mr. Doran had operated frequently for tuberculous peritonitis; one patient died a few years later from phthisis and the small intestines which had been matted together at the operation were found almost free after death except in the pelvis.

Mr. HORACE MANDERS remarked that it was evident that the first stages of inflammation were frequently induced by traumatic disturbance without any influence from microbes; perhaps they were not all in accord as to the precise meaning of the term "inflammation." He thought that Mr. Marsh had pointed out, with great clearness as regards treatment, that in cases of simple plastic inflammation with excess of callus the surgeon could dominate the injury by manipulation or operation, keeping out microbic invasions by aseptic precautions, but in cases of adhesive inflammation of joints due to microbic infection a different condition obtained and any attempt at manipulation always failed. This Mr. Manders believed to be due to the fact that the tissues, especially the endothelium, were dissolved by the toxins secreted by these microbes, whether tubercle bacilli, streptococci, or gonococci, and that until a means could be found of neutralising these toxins the microbes which had taken the initiative remained masters of the situation.

Dr. BOXALL remarked that the effusion of thick plastic lymph into the peritoneum like the provisional callus around a bone was a wise provision of nature which often served to shut off the general peritoneal cavity and protect it from injury. Having served its purposes, this effusion in the majority of cases became subsequently almost completely absorbed. The reason why in some cases but not in others the process of repair seemed to run riot so that one or more firm bands of adhesion were left was by no means clear.

LIVERPOOL MEDICAL INSTITUTION.

Perforating Ulcer of the Stomach.—Myxœdema treated with "Colloid."—Exhibition of Cases and Specimens.—The Vaccination Act of 1898.

A MEETING of this society was held on Jan. 5th, the President, Dr. MACFIE CAMPBELL, being in the chair.

Mr. ROBERT JONES related the histories of two cases operated upon for Perforating Gastric Ulcer, one of which recovered and the other died fourteen days after operation. In the first case, a woman, aged nineteen years, the perforation had existed for three hours and was situated on the posterior aspect near the pylorus. Some partially digested milk had exuded. There was no peritonitis. The ulcer was inverted and stitched and the wound closed without drainage. She made an uninterrupted recovery. From the appearance of the ulcer, absence of anæmia, and previous history of tubercle, Mr. Jones suggested the possibility of the tuberculous nature of the ulcer. The second case, a woman, aged twenty-one years, was operated upon fourteen hours after perforation; she was very collapsed and a large indurated perforation was found near the cardiac end of the lesser curvature on the anterior aspect. There was exudation of partially digested food. Adhesions had formed to the liver and abdominal parietes. There was considerable exudation of lymph which had to be forcibly scraped. The ulcer was obliterated by a purse-string suture, fortified by Lembert stitches and completed by stitching omentum over the area. She progressed fairly well for fourteen days when she vomited pus. An incision was made and a peri-splenic abscess containing foul pus was found. She was very collapsed and died twelve hours later. A post-mortem examination showed the perforation to have quite healed. There was no communication between the wound area and the peri-splenic and sub-diaphragmatic abscess cavities. The diaphragm was burrowed through and the lung opened into. There was no ulcer on the posterior aspect of the stomach. Mr. Jones agreed with the recent suggestion of Mr. F. Furner that the lesser sac of peritoneum should be irrigated and the posterior aspect of the stomach inspected in nearly all cases.—Mr. FRANK T. PAUL, while fully agreeing with Mr. Jones as to the value of early operation, thought it was sometimes possible to attain success after a longer delay than twenty-four hours. Stomach fluids in the peritoneal cavity were much less virulent than intestinal matter; the general depression was much less and the inflammatory changes were more plastic. He advised more pains to be spent in drying out the peritoneal cavity than in flushing it; a complete and thorough flushing was impossible. When the soiling was general a drainage-tube should be put in Douglas's pouch through a separate opening. In Mr. Jones's second case, a difficult and severe one, he thought it had been dealt with most ingeniously and it was only through an accident that its ultimate success was marred.

Dr. BUCHANAN related a case of Myxœdema in a man, aged fifty-four years, treated with "colloid" matter according to Dr. R. Hutchinson's formula. The disappearance of symptoms was shown to be remarkable and after four months' treatment the restoration to health was complete. The case was illustrated by a series of lantern slides demonstrating in a marked degree the condition of the patient before and while undergoing treatment.

Dr. ALEXANDER showed a Calvarium from a man, aged twenty-four years, who was brought to the parish infirmary by the police from an hotel in the city. He had been found lying on a bed semi-conscious and bleeding slightly from one nostril. A revolver was found on the floor with one chamber empty; there was no mark of any injury on his face or any discolouration from powder. He remained in a semi-conscious condition and died the day after admission. Post mortem there was found a scarred fracture of the external table of the frontal bone around which the periosteum was raised. On opening the skull a fracture of the cribriform plate of the ethmoid was found and a bullet was discovered in the brain substance above; it had impinged on the internal table making only a small indentation. The frontal lobes were much damaged.

Dr. BRIGGS showed a specimen of a Uterine Fibroid weighing 13½ lb. removed from a single woman, aged thirty-three years. The operation was performed on Nov. 26th,

1898, through an abdominal incision by hysterectomy, of which enucleation was the first step.

Dr. N. E. ROBERTS read a paper on the Vaccination Act, 1898, and the Local Government Board Order of Oct. 18th. He deplored the attitude of hostility which large sections of the community had assumed towards vaccination. There could be no doubt that these good people had given them a fall and repudiated them and their work in the matter of vaccination. Not until some great calamity occurred would this insane agitation be stifled, meanwhile they were drifting into a position of great danger. He particularly deplored the fact that large numbers of objectors were animated by a high enthusiasm, regarding their action as a kind of holy war, in a neighbouring town thousands crowding for exemption certificates singing "Christians Awake" and other appropriate hymns. He explained the provisions of the Act and Order and appealed for cordial relations between the public vaccinators and the private vaccinators under the somewhat trying circumstances of the public officer having to visit the homes.—The PRESIDENT in opening the debate said that probably no more retrograde step had ever been taken by Parliament—a step by which the majority had been handed over bound hand and foot to a fanatical minority. Calf lymph, he thought, was responsible for a certain amount of insufficient vaccination. He had used calf lymph exclusively during the last fifteen years and required to operate a second time in about 15 per cent.; this gave rise to dissatisfaction among the friends. What, again, was to be done with cases in which only one or two marks took? He generally recommended revaccination in four or five years. The importance of cleanliness in skin and instruments was now well understood and everything should be done to remove prejudice against the operation.—Mr. RUSHTON PARKER said that in England the public seemed determined to take the risk of small-pox for some of their children. Whether the Government were wise or not in adopting the recent Vaccination Act it was evident that they were, as individuals, staunch adherents of vaccination and only adopted this Act as being in their expectation more likely in the long run to maintain the practice of vaccination than the order for its compulsion upon a democratic community who largely refused to be coerced in this matter.—Dr. HUGH R. JONES called attention to two statements in the report of the Royal Commission—that vaccination was protective against small-pox and that vaccination could not be replaced at present efficiently by other preventive measures. There was, however, another side; isolation, notification and disinfection, as subsidiary measures, ought to receive their full credit and the hope of the future for the extinction of infectious diseases depended chiefly upon efficient sanitary measures.—Dr. HOPE considered that the present grave condition in respect to vaccination was contributed to by the very long period, extending over many years, which the Royal Commission took before publishing their conclusions. During these years the opponents of vaccination were extremely active and unfortunately very successful. He pointed out that the Bill introduced by Mr. Chaplin differed very widely from the Act as passed—an Act which was in absolute and direct antagonism to the carefully considered recommendations of the Royal Commission whose exact words were: "We are of opinion that the State ought to promote the vaccination of the people"; and again, "We can see nothing to warrant the conclusion that in this country vaccination might safely be abandoned and replaced by a system of isolation."—Dr. SMART, Dr. ARCHER, Dr. FERMEWAN, Dr. HILL, and Dr. GRÜNBAUM spoke.

NOTTINGHAM MEDICO-CHIRURGICAL SOCIETY.

Acute Infective Inflammation in Bone.—Exhibition of Cases.

A MEETING of this society was held on Dec. 21st, 1898, Mr. PRYCE, President, being in the chair.

Mr. MORLEY WILLIS read a paper on Acute Infective Inflammation in Bone. The difficulty attending the early diagnosis of this condition was remarked upon and stress was laid upon tenderness of the bone in the neighbourhood of an epiphysis, taken in conjunction with the other signs of acute disease, as being an important aid in forming an opinion. The pathology, it was stated, was usually an acute infective osteomyelitis developing near the epiphyseal line where pathological changes are prone to occur. Acting on this idea of the origin of the disease the treatment should consist of not merely incising the periosteum, but trephining the shaft of the bone near the epiphyseal line, enlarging the opening if necessary, and removing all the acutely inflamed medulla, irrigating with some efficient antiseptic, and lightly packing with gauze. A case was related which showed the futility of the treatment which stopped short when the periosteum had been incised; the disease spread to the knee-joint and the leg had to be subsequently amputated. This it was believed might have been averted had the bone been trephined in the first place.—Mr. CHICKEN did not share the views expressed by Mr. Willis as to the pathology of the disease.—Mr. MACKIE related a case in which suppurative pericarditis followed the necrosis of a long bone; the pericardium was opened and drained and the patient made a complete recovery.—Mr. A. R. ANDERSON and the PRESIDENT also discussed the paper.—Mr. WILLIS replied.

Dr. W. B. RANSOM showed:—1. A patient (and read notes of the case) who had been affected with Paralysis of the whole of the Left Side, including the Face, together with the Right Leg. His symptoms pointed, it was thought, to a thrombosis of the basilar artery, but he had completely recovered under treatment, only a very slight weakness of the left hand remaining and that was diminishing. 2. A Brain showing Sarcoma of the Cortex. The patient had improved for a time under iodide of potassium but then became worse. Operation was undertaken but removal of the whole growth was impossible. 3 The Brain of a patient who had suffered from Aphasia which was discovered to have been due to thrombosis of the central branches of the Sylvian artery.

Mr. A. R. ANDERSON showed:—1. A patient after Pylorectomy. The duration of the symptoms had been only three months according to the patient's statement. They had consisted of vomiting and pain. No blood had been vomited. There was great dilatation of the stomach at the time of operation. Previously to operation the stomach was washed out. The growth was excised and union between the stomach and the duodenum was effected by sutures only. The operation lasted 1 hour and 5 minutes. Food was given by the mouth on the third day after operation. The patient left the hospital perfectly well in every respect and had remained so up to the present time. A section of the growth showed it to be a spheroidal cell carcinoma undergoing colloid change. 2. Osteo-sarcoma of the Fibula removed by operation. 3. Notes of a case of Transperitoneal Uretero-lithotomy. This case was one in which the symptoms simulated closely those of appendicitis of which there had been apparently several attacks. An operation for appendicitis was undertaken in a quiescent interval; the appendix was found to be quite healthy and normal but on feeling about a stone was discovered in the right ureter at the brim of the pelvis. The original wound was closed and allowed to heal and when this had occurred another operation was undertaken for the removal of the stone in the ureter. An incision was made in the right linea semilunaris and the bowels being kept out of the way with sponges the ureter was incised and three small stones were removed which formed a chain. The lowest one was of uric acid and the other two were of phosphatic nature, soft and crumbling. The ureter was then closed by a continuous suture and a flap of peritoneum was brought over the wound and sutured in that position. The abdominal wound was then closed. Recovery was uneventful and complete and the patient remains perfectly well.

Mr. CHICKEN showed:—1. The patient and photograph of a case of Congenital Obstruction of the Ethmoidal Infundibula. An incision down the centre of the bridge of the nose was made and the nasal bones were separated. A communication was then established between the middle meatus of the nose and the ethmoidal cells by drilling. The nasal bones were brought back into place and the wound was stitched. Only a faint scar remains and the result has been good, but one side shows some signs of a tendency for the passage to close. 2. Some Abnormal Semilunar Cartilages. These had been removed from the knees of different patients and were undergoing absorption. In some cases they had been nearly loose and Mr. Chicken thought it probable that this was one source of loose bodies in the knee-joint. 3. Skiagrams of Three Ununited Fractures Produced by Direct Violence. They had all been wired with a successful result

in each case. 4. Two specimens of Necrosed Bone. One, a minute sequestrum, was found in the centre of the shaft of a tibia in a small abscess cavity containing at the time of operation only a little caseous material. The other consisted of the entire circumference and a considerable length of the shaft and had been removed by operation, having been divided into two pieces to facilitate removal.

BRADFORD MEDICO-CHIRURGICAL SOCIETY.

Ovarian Tumours.—Operative Treatment of Cancer of the Breast.—Hæmatoporphyrin in the Urine.

A MEETING of this society was held at the Royal Infirmary, Bradford, on Dec. 20th, 1898, the President, Dr. BERRY, being in the chair.

Dr. EURICH gave a demonstration of microscopic sections from a series of Ovarian Tumours. He mentioned that the malignant or non-malignant character of a tumour could not be determined until an operation had been performed, also that in the same tumour there could be demonstrated a change from an innocent to a malignant type, and further that in the ovary itself, although it might not apparently be involved in the tumour, yet malignant disease might be demonstrated microscopically.—Mr. J. B. HALL remarked that a tumour might exist for years without showing symptoms of malignancy and he advocated early removal of all tumours as soon as they were diagnosed.

Mr. J. B. HALL read a paper on the Operative Treatment of Cancer of the Breast. He expressed the opinion that there was a brighter future for the surgical treatment of cancer of the breast than for that of any other form of malignant disease, provided only that the disease was recognised early and that a thoroughly radical operation was performed. Mr. Hall contended that the bad results of operations in the past had arisen from imperfect removal and he pointed out how greatly the percentages of cures had increased since the introduction of the more extensive methods of operation. The aseptic treatment of wounds rendered it now possible to perform these operations without grave risk to life. He then gave a summary of the results of operations performed by various surgeons from 1870 to 1898 and contrasted the ratio of cures (5 per cent.) which were obtained by Billroth with that (from 50 to 60 per cent.) which had been obtained by Halsted, Watson Cheyne, and others in the last few years. Billroth's cases, published in 1878, showed an immediate mortality of 24 per cent., while Halsted's series of 133 cases which had occurred between 1889 and 1898 recovered without any death arising from the operation, and in 1897 Bennett May recorded 78 cases without a single fatal result. Allusion was made to the researches of Heidenhain, Stiles, and others on the course of the lymphatics of the breast, and the conclusion arrived at was that no operation could be deemed satisfactory unless not only the breast and axillary glands were removed, but also the lymphatic channels which run in the pectoral fascia. Halsted's operation was selected as fulfilling these requirements, and a description of this operation was given and diagrams were shown to illustrate the steps in the procedure. Mr. Hall stated that very little loss of function followed the operation and that it was generally possible owing to the large mass of tissue removed to cover in the wound without undue tension on the skin. He said that in the older method of operating the pectoral muscle after being stripped of its fascia became much infiltrated with fibrous tissue and consequently it suffered considerable loss of function. The idea that the operation would be accompanied by an increased immediate mortality was negatived by the experience of operators who had used it. Mr. Hall contended that in consequence of the contents of the axilla being fully exposed to view, and considering also the possibility of employing the scalpel and the forceps instead of the finger, by no other method could they be so easily and safely removed. He then discussed the question of operating in cases which were too far advanced to hope for a cure and advocated operation as a palliative measure in all cases where there was a reasonable prospect of removing the whole growth and in which operative interference would not be exceedingly dangerous to life or leave a hopeless functional lesion.—Mr. HORROCKS remarked that he thought that in most cases the operation was unnecessarily severe and that the pectoral fascia could be removed without removing the whole muscle. He said that the results of operation in cases of atrophic scirrhus should not be grouped with the results observed in rapidly growing cases as the prognosis was so much more favourable. He thought that statistics of mixed cases were consequently unreliable.—Mr. ALTHORP said that the more favourable results obtained in later years as compared with the operations in earlier cases were partly due to improvement in operative technique whereby the immediate mortality of the operations was much reduced.—The PRESIDENT asked if it was a fact that cases in which suppuration occurred were more likely to be followed by a cure than those in which primary healing followed.—Dr. HIME, Dr. WOOD, Dr. BELL, and Dr. ARNOLD EVANS also took part in the discussion.—In reply Mr. HALL expressed the opinion that it was not possible to remove the pectoral fascia completely while leaving the muscle behind. He said that possibly the apparently better result in cases which suppurated was due to the circumstance that the suppuration might possibly be produced by a very extensive handling and bruising of the tissues consequent on an extensive operation.

Dr. J. H. BELL read notes of a case in which Hæmatoporphyrin had appeared in the Urine. The case was one of nervous affection accompanied by insomnia and sulphonal (in 10 gr. doses) had been given to induce sleep, but the patient had continued the administration when no longer under medical supervision.

THE ODONTOLOGICAL SOCIETY OF GREAT BRITAIN.—An ordinary meeting of this society was held on Jan. 9th, at 40, Leicester-square.—The Treasurer presented the balance sheet for the year ending Oct. 31st, 1898, which showed the finances of the society to be in a satisfactory condition.—Mr. Badcock brought forward a case in which the right maxillary third molar communicated with the antrum. The patient in question complained of slight pain in the region of the right molars and an examination of the teeth showed the existence of a cavity on the mesial side of the third molar, the pulp cavity being in a septic condition. The tooth was extracted with but little difficulty and on the patient rinsing his mouth the water was found to pass through his nose. A lotion of boracic acid was prescribed and no subsequent trouble occurred. Mr. Badcock stated that he had been unable to find any similar case recorded.—In connexion with this communication Mr. Redman exhibited a dried specimen in which the roots of the third molar opened into the antrum.—Mr. Baldwin exhibited several instruments of his own designing which he had found useful in practice.—Mr. H. Lloyd Williams exhibited a small modification of Hammond's splint which he had used for some years for fractures of the mandible, far back, where only one tooth, usually the third molar, remained in the smaller fragment.—Mr. J. H. Mummery read a paper on the Teeth of Echeneis (sucking fish). He stated that the lower jaw in occlusion projects far beyond the upper, so that the anterior upper row of teeth shut almost entirely behind the whole of the teeth on the dentary bone in the lower jaw. This upper row of teeth occupied the anterior border of the intermaxillary bones, projecting almost horizontally forwards. The teeth were much longer than elsewhere in the mouth and of a very different shape. They are flattened antero-posteriorly, slightly expanded at the base, narrowing upwards, and expanding again into a curious spatula or hoe-shaped crown, strongly recurved and prolonged on the mesial side into a point. Behind the angle of the mouth there is a broken line of seven or eight teeth prolonged to the extremity of the intermaxillary bone. These scattered teeth are of a quite distinct shape from those above described and resemble those in all other parts of the mouth—their shape is conical and they are very sharply recurved with sharp-pointed enamel tips. Behind the spatula-shaped teeth there is an imperfect scattered row of conical incurved teeth on the intermaxillary bones. The vomer is thickly beset with teeth of the same description. The teeth of the lower jaw occupy the dentary bone and the lingual bone, teeth being also present upon the inferior pharyngeal bones, the bronchial arches, and the superior pharyngeals. The lower teeth are arranged in four or five more or less distinct rows, the larger teeth occupying the front row and the smaller the inner row. The whole series of lower teeth is interrupted at the symphysis by an edentulous space about the width of two

of the larger teeth. The lingual bone is covered with minute teeth arranged in lines radiating from behind forwards; these teeth are uniform in size and on microscopical examination are seen to have the same shape as the other teeth of the lower jaw. The inferior pharyngeal bones are crowded with minute teeth of the same shape and structure. On the concave surfaces of the bronchial arches looking towards the gullet are three or four rows of bony processes or tubercles arranged at regular intervals and covered with similar minute conical teeth. The armature of the mouth is completed by similar minute recurved teeth covering the superior pharyngeal bones. The mode of attachment is quite distinct from that described in any other fish of the family Scomberidæ. Each tooth—and the description applies to all the teeth in the mouth, including those upon the tongue and branchial arches—is attached to the summit of a special bone of attachment but is not anchylosed to it, it slides freely upon the bone and exhibits a modified form of hinge. The summit of this process of bone is in the form of a convex ring slightly raised on one side, resembling the ball of a ball-and-socket joint with the centre cut out leaving an elevated ring of bone. The base of the tooth is accurately adapted to this surface and slides easily upon it. A capsular ligament surrounds the whole. It will be seen that this arrangement would allow of a sliding movement of the tooth on the bone of attachment in every direction, but the ring of bone being slightly more elevated on the anterior aspect the motion is limited in this direction more than in the opposite, and the tooth can be bent over much more in the direction of its point than in any other direction, the strong ligamentous band being stretched no doubt serving to draw the tooth into position again.

WEST LONDON MEDICO-CHIRURGICAL SOCIETY.—An ordinary meeting of this society was held in the Society's rooms at the West London Hospital on Jan. 6th, Dr. S. D. Clippingdale, President, being in the chair.—Mr. R. Lake read a paper on the Treatment of Laryngeal Phthisis based on a series of 160 cases. He did not enter into any discussion of methods of treatment which he had not tested. Clinically the cases could be resolved into groups each of which derived benefit from slight modifications of treatment. He particularly dwelt upon the advantages of intra-tracheal injections in cases of superficial ulceration and slight swelling, but admitted its uselessness alone in cases of greater severity. —The paper was discussed by the President, Mr. McAdam Eccles, Mr. B. James, and Dr. T. R. Atkinson.—Mr. J. R. Lunn read a paper on Two Cases of Double Optic Neuritis associated with Mastoid Disease. The first case was that of a boy, aged eleven years. The patient complained of giddiness and severe pain in the right ear from which there was a little offensive discharge and he appeared to be quite deaf. Behind the right ear was a fluctuating swelling. In two days the boy became delirious and then maniacal and the swelling behind the ear became larger. Under an anæsthetic a perforation of the membrana tympani was discovered through which a drop of pus oozed. The mastoid cells were trephined and were full of offensive, cheesy matter. The operation was necessarily extensive and at the end of the excavation the pulsating lateral sinus could be seen. The patient made a good recovery and the optic neuritis quickly cleared up. The second case was that of a girl, aged fourteen years, who had suffered from ear trouble since an attack of measles and scarlet fever when seven years old. Behind the right ear was a fluctuating swelling and from the meatus flowed an offensive discharge. Deafness was marked. The right membrana tympani was perforated. Both optic discs showed signs of optic neuritis. The right mastoid process was trephined and much sclerosed bone had to be removed before the offensive caseous matter could be reached. This patient also made a good recovery and the optic neuritis soon disappeared.—The paper was discussed by the President, Mr. R. Lake, and Dr. R. D. Batten.—Dr. James Allan showed a specimen of Hypertrophied Prepuce.—Dr. Allan also read a paper on Twelve Cases of Tracheotomy for Laryngeal Diphtheria in Young Children with Nine Recoveries. The details of the operation were discussed and stress was laid on those points which he considered important. It was shown by reference to a case that tracheotomy sometimes gave the most brilliant results in apparently hopeless cases. The indications for the operation were discussed and the dictum "When in doubt operate at once" was quoted with approval.—The paper was discussed by the President, Dr. C. Gibbs, Mr. Lunn, Mr. R. Lloyd, Dr. T. R. Atkinson, and Mr. McAdam Eccles.

Reviews and Notices of Books.

A Manual of the Practice of Medicine. By FREDERICK TAYLOR, M.D., F.R.C.P. Lond. Fifth edition. London: J. & A. Churchill. 1898. Pp. 1002. Price 16*s*.

THE ever-widening area of medical science imposes no small task upon authors of text-books, especially when these works have gained the favour of the student world, for such popularity means the frequent production of a new edition and each such edition implies revision and the exercise of much judgment in curtailment here or expansion there, according to the direction in which medicine is growing. Dr. Taylor's manual is one which has deservedly obtained much favour, so that the appearance of a fifth edition within a comparatively short time is not surprising. We are glad, also, to observe that advantage has been taken of this to publish the book in a form more worthy of its character. The pages have been increased in size as well as the type. The author, too, has subjected the work to very thorough revision, rendering it most compendious and accurate and fully abreast of modern knowledge. Thus several additions have been made to the sections dealing with infectious diseases—e.g., in malarial fevers, dysentery, diphtheria, and cholera. The sections upon Diseases of the Nervous System are especially noteworthy for the systematic and exhaustive manner in which these affections are described and analysed. The diseases of the blood and of the ductless glands have given occasion for the introduction of much new matter and the account of diseases of the urinary organs is preceded by a useful account of the urine and of the characteristics of Bright's disease. It is enough to say that the book is one which thoroughly meets the needs of the student who will find it a reliable and useful guide to the medicine of to-day.

Ovariotomy and Abdominal Surgery. By HARRISON CRIPPS, F.R.C.S. Eng., Operator for Abdominal Sections to the Ward for Diseases of Women in St. Bartholomew's Hospital, &c. London: J. & A. Churchill. 1898. Pp. 624. 8vo. Price 25*s*.

FOR many years a great controversy has raged as to whether gynæcological operations should be performed by the gynæcologist or should be handed over to the general surgeon. Into the consideration of the respective merits of the rival claimants we do not now intend to enter, but as the large majority of the treatises dealing with ovariotomy and kindred operations have been written by gynæcologists it is of great interest to see these subjects treated by a general surgeon.

Mr. Harrison Cripps commences with a useful account of the anatomy of the abdomen and pelvis, and 12 excellent plates (for the most part coloured) of the structures described add materially to the value of this chapter. The author next proceeds to describe the preparations necessary for an abdominal section, and appropriately he gives an account of the arrangements in the operating theatre attached to the gynæcological ward at St. Bartholomew's Hospital. He considers that a skylight is essential, but it should not be made to open, for draughts and dust are necessary consequences and if hermetically closed the ropes and pulleys are also avoided. Even for opening side windows the author prefers a rod working in a brass attachment on the window frame, as likely to be less septic. The walls of the theatre are of alabaster and the corners are all rounded. The ceiling is of Parian cement painted with three coats of white paint and

the floor is of marble mosaic and is made to slope to one corner where is a small trapped pipe. The top of the operating table consists of a shallow copper tray three inches deep covered with an inch-thick plate-glass slab. The tray is filled with water at 130° F., and the temperature falls but little even during a prolonged operation. The water tray will not permit the inclination of the table for the Trendelenburg position, and when this is desired an adjustable top is employed. Mr. Cripps has designed a semi-circular glass-topped table to carry the instruments; it fits round the operator as he stands on the right side of the patient and in addition to holding the instruments within easy reach "it has the advantage of being a polite method of preventing spectators from crowding over the operator's shoulder." Mr. Cripps has been so frequently asked during the last few years by old pupils as to the best methods of fitting up an operating theatre in accordance with modern views that the description of the theatre given in this volume is more detailed than it would otherwise have been. For all abdominal operations the author greatly prefers chloroform to ether, as he considers that the latter does not give such thorough relaxation of the muscles, and is liable to cause venous congestion, and especially because ether sometimes produces a severe and persistent bronchitis.

The chapter on the Diagnosis of Ovarian Tumours is decidedly good and should prove of value to those who have not had much experience. Often the diagnosis of an ovarian cyst is as simple as it can possibly be, but occasionally the tumour may defy all the diacritical acumen of the most experienced gynæcologist. In the operation of ovariotomy Mr. Cripps prefers an incision not exactly in the middle line, but a little to one side or the other of the tendinous raphe. By the bye, why does Mr. Cripps always write "tendonous"? He does not consider that a long incision is any more liable to lead to a ventral hernia than is a short incision and he therefore advises that it should be freely lengthened if necessary. After the removal of a cyst from between the layers of the broad ligament it is often recommended that the edges of the open capsule should be fixed to the borders of the wound. With this advice Mr. Cripps says that he cannot agree, as a cavity is thereby left which otherwise would not exist, and with this opinion we are inclined to concur. A difficulty is often experienced in inserting a Keith's drainage-tube into the deepest part of Douglas's pouch on account of the intestine occupying this cavity. Mr. Cripps gives a useful practical suggestion which we do not remember to have seen before. He advises that the tube should be passed down while the water used for flushing is still in the pelvis.

Silkworm gut sutures are in the author's opinion the best and they should be of the stoutness of salmon gut; they should be passed through the whole thickness of the abdominal wound and care should be taken that the sutures pierce the peritoneum not farther than one-sixth of an inch from the edge, for if a broad piece of the serous membrane be included it gets drawn up between the muscular surfaces and Mr. Cripps believes this to be often a cause of a local scar and a hernial protrusion. When a Keith's drainage-tube has been employed it is frequently a difficult matter to decide when to remove it. Intestinal obstruction may result from pressure of the tube and two cases of this are quoted; on the other hand the drain may be removed too early and that is especially likely to occur in cases in which any suppuration has been present.

Of the many complications which may supervene after an ovariotomy or other abdominal section vomiting is perhaps the most troublesome, and if it does not yield to treatment in two or three days the life of the patient is in imminent danger. The abdominal distension in itself is increasing the exhaustion and the chance of benefit from an exploratory laparotomy is indeed remote. Under these circumstances Mr. Cripps advises enterotomy performed through a small incision over the right iliac fossa. A fresh incision is preferable to reopening the original wound as septic infection of the peritoneum is less likely and it is more easy to reach a portion of the small intestine near the ileo-cæcal valve.

A good account is given of Cæsarean Section and the author expresses himself strongly in favour of applying two rows of sutures, one deep and the other superficial, through the uterine wall. Champneys's method of preventing a future pregnancy is recommended; it consists in ligaturing a loop of the Fallopian tube and cutting off the knuckle on the distal side of the ligature.

It is a necessary consequence of the conditions under which this book was written that we are given an account of abdominal hysterectomy while the vaginal operation is not described. The author expresses himself as very sceptical in regard to deaths after the third day in this operation which are put down to shock or exhaustion; he considers that in all probability they are the result of sepsis. Chapters on Extra-uterine Fœtation and Peritonitis follow. In the account of Gastrostomy Mr. Cripps declares that he sees no necessity for the elaborate operations which have been devised in recent years, for he finds no difficulty in preventing the escape of gastric juice by using a small pad which he has invented. It consists of a flat rubber disc a little larger than the opening into the stomach; it is pierced by a double thread and is introduced into the stomach by being rolled up. When it is desired to close the gastrostomy opening this is drawn forwards and the threads are tied over a little roll of lint containing a glass rod.

The author advises an operation in appendicitis even after the first attack if a persistent swelling can be felt in the iliac region, and in all cases with recurrent attacks. In cases in which the large bowel is obstructed and yet the exact cause cannot be ascertained Mr. Cripps urges that an incision in the left iliac region offers the best chance of ascertaining the cause and, if necessary, of performing a palliative colotomy.

The author appears to be much prejudiced against Murphy's button, but the good results which have undoubtedly been obtained by its use by many operators go far to neutralise the argument drawn from the 4 fatal cases which Mr. Cripps quotes.

Other chapters deal with Abscess and Hydatids of the Liver and with Removal of the Spleen, but space forbids a detailed consideration. Mr. Bruce Clarke contributes a chapter on the Surgery of the Kidney and, very good though the article is, it is impossible to deal adequately with so important a subject in 32 pages. Mr. C. B. Lockwood is responsible for the account of the Radical Cure of Hernia; it is very satisfactory and we would especially praise the diagrams. Mr. Cripps tells us that he has performed nearly 1000 abdominal sections and he has given in an appendix abstracts of the notes of 183 of the most interesting of these; they will serve well to illustrate the descriptions and enforce the teaching contained in the body of the work. We have read the book with pleasure, for it is the frank expression of the individual views of a surgeon whose wide experience must make his opinions worthy of careful consideration even if not always of full acceptance.

Diseases of Women. By E. C. DUDLEY, A.M., M.D. London: Henry Kimpton. Pp. 636, with 422 Illustrations (of which 47 are in Colours) and 2 Coloured Plates. 1898. Royal 8vo. Price 21s. net.

THE output of gynæcological literature in America during the last few years has been very large, and in Dr. Dudley's book we have the latest addition to the already numerous

American text-books upon Diseases of Women. The author has departed with advantage from the usual classification into diseases of regions and has arranged his work upon a pathological basis, the book being divided into five parts as follows: I., General Principles; II., Inflammations; III., Tumours, Malformations, and Tubal Pregnancy; IV., Traumatisms; and V., Displacements and Pelvic Massage. It is of course quite true, as he contends, that dysmenorrhœa, amenorrhœa, menorrhagia, and sterility are symptoms and not diseases, but we doubt whether the fact that there is no collective account of any of these conditions and that we are referred to the index for their consideration will commend the book to students or practitioners seeking information upon these subjects. The result of reading this work is to strengthen the impression that the gynæcologist is becoming daily more and more of a surgeon and less and less of a physician. A very large part of the book is taken up with the account of various operations and in some instances an undue amount of space has been allotted to matters which we, in this country at any rate, are inclined to regard as of rather secondary importance. For example, the description of the operation of trachelorrhaphy occupies some twelve pages while ovariotomy is dismissed in five, two of which are almost entirely occupied by drawings of instruments. There is a similar want of proportion about other parts of the book which detracts from its value, although many of the chapters are excellent not only in the matter they contain but also in the manner in which it is treated.

The first part of 140 pages is taken up with General Principles, Antiseptic and Aseptic Surgery, and the technique of minor and major operations. This part concludes with a chapter upon the Relation of Dress to the Diseases of Women. The author calls attention to the fact that the average woman wears seventeen layers of dress material round her waist constituting if joined end to end a bandage 34 ft. long. In the hygienic form of dress which he advocates these seventeen layers would be reduced to five, but we doubt whether it is of any use to attempt to convince the average woman in a matter of this kind subject as she is to the dictates of fashion. We must confess that we do not regard the illustrations as wholly convincing; for instance, the young woman who is represented in a composite photograph with and without her stays has a much better figure with than without them, an inference which, we gather, the author would not wish us to draw.

Part II., upon Inflammations, is well arranged; the plan of considering salpingitis, ovaritis, and pelvic peritonitis in close proximity to one another is a good one and calculated to impress upon the reader their close etiological relationship. Part III. treats of Tumours, Tubal Pregnancy, and Malformations. The chapters upon Fibroid Tumours and Carcinoma are good and clear, but the account of tubal pregnancy is somewhat disappointing. Part IV. is devoted to Traumatisms. The author expounds his views upon tear of the perineum in some detail, and describes with numerous clear diagrams and figures the operation which he recommends and practises for this condition. Part V. contains an account of Displacements of the Uterus and their Treatment, especially the treatment by operation. Under the treatment of chronic inversion of the uterus we notice that no mention is made of by far the best and most successful mode of treatment—continued elastic pressure with Aveling's repositor, or of the method of performing posterior colpotomy and dilating the constricting ring with the fingers in cases where elastic pressure fails.

The book concludes with a good account of pelvic massage, a mode of treatment which has found little favour in this country. There are some 400 illustrations, many original and others borrowed. Some of these are far from good and it seems a pity at the present day to reproduce figures which give a very poor idea of the conditions which they are intended to represent, such as the picture of a multiple myoma on page 310 or Fig. 173 representing a stage in the operation of myomectomy which is not only a poor drawing but anatomically incorrect. Here and there are some evidences of haste, such as "Cullenworth" for Cullingworth, while Dr. Auvard would hardly recognise either himself or his "Formulaire Gynécologique Illustré" as "Auvard; Illustrated. Falle aus der Frauen Praxis." Dr. Dudley's book has many points of merit but we doubt whether in its present form it will find any permanent place in the gynæcological literature of this country.

A Manual of Otology. By GORHAM BACON, A.B., M.D., Professor of Otology in Cornell University Medical College, New York; Aural Surgeon, New York Eye and and Ear Infirmary. With an Introductory Chapter by CLARENCE JOHN BLAKE, M.D., Profesor of Otology in Harvard University. London: Henry Kimpton. 1899. Price 9*s.* net.

THIS book of 385 pages is well printed and written, and it forms yet another contribution to the literature of aural diseases. Its size prevents it laying claim to be considered an exhaustive treatise on the subject but it contains much that is good and useful. Due space has hardly been allotted to matters of importance. Thus the treatment of aural exostosis occupies one short paragraph and the description of the treatment of nasal polypi complicating deafness is so brief as to give a novice a very inadequate idea of the difficulties surrounding these cases. The author condemns operations for chronic catarrh, such as excisions of the ossicles, and states truly that no such operations can be free from the risk of making patients worse than they were before. The chapters on Sinus Thrombosis and Cerebral Complications of Middle Ear Disease are about the best in the book.

The index is hardly extensive enough; for instance, no direct reference is made in it to the article on Foreign Bodies in the Ear. The work is well illustrated, although most of the anatomical plates are familiar to us in Gray's Anatomy.

The Cold Bath Treatment of Typhoid Fever. By F. E. HARE, M.D. London: Macmillan and Co. 1898. Pp. xii. and 196. Price 6*s.*

DURING his tenure of the post of resident medical officer of the Brisbane General Hospital the author of this work had ample opportunity for testing the value of therapeutic measures in fever; and on the particular subject of which this volume treats it would be difficult to find what, without disparagement, may be termed a therapeutic experiment carried out on such a scale and under such rigid conditions as obtained in this instance. The introduction of hydrotherapy into the treatment of fever dates from the time of Currie, but it was left for Brand of Stettin to advocate the systematic use of cold baths in typhoid fever upon very definite and well-reasoned grounds. His main argument was that early recourse to this treatment robbed typhoid fever of much of its dangers, influencing even the character of the specific disease; and although others who have followed the practice may not have admitted so much there has been a general consensus as to the benefit derived from the measure in subduing the intensity of the febrile process, the long-continued duration of which is one of the gravest risks which the subject of typhoid fever encounters. The method of the application of the bath, the rules for its employment, the frequency with which it is necessary to apply it, and the contra-indications that prevent recourse to it—these and every other subject cognate to the treatment are fully and clearly stated by Dr. Hare whose results are worthy of the most attentive study. It is impossible to read his experiences without being convinced

of the efficacy of the treatment and that not merely in the lessened mortality which he proves to follow its employment but from the striking manner in which most of the more serious symptoms are controlled. The work is all the more valuable because it affords a comparison between series of cases in which the treatment was purely expectant and another series in which cold bathing was systematically followed. The numbers too are large enough to satisfy the most captious of critics and we have no doubt that the publication of this book will lend an impetus to the more systematic adoption of the practice in our fever hospitals. We do not think any useful purpose will be served by culling statistics from the volume before us. The book should be thoroughly and carefully perused by all who have the charge of fever patients. It might be urged that alternative antipyretic measures receive but little notice, but we venture to think that no such measure has been proved to be so efficacious as that of which this volume treats.

JOURNALS.

The *Practitioner* for January appears in an enlarged form. The Editorial Month includes among other interesting matter a striking statistical diagram showing death-rates from small-pox in Prussia, Holland, and Austria. In the two former countries comparisons are shown between the years when compulsory vaccination did not exist and those in which it did. In Austria compulsory vaccination does not exist, and the small-pox death-rate is marked. In the original articles Professor Clifford Allbutt contributes an admirably written article on Tuberculosis, Mr. Treves recounts an interesting case of Jaundice of sixteen years' standing treated by operation, and Mr. Edmund Owen has a useful paper upon Conical Stumps. The Hero of Medicine is William Hunter and the Medico-Literary Causerie deals with "Doctor Therne."

Die Therapie der Gegenwart. Edited by Professor G. KLEMPERER. Berlin.—This journal first appeared forty years ago, but this year, owing to the resignation through ill-health of the former editor, Professor Löbisch, it enters on a new phase of existence under the guidance of Professor G. Klemperer. It is intended to deal primarily with practical therapeutics, but it will also contain articles and abstracts on closely allied subjects, such as experimental therapy. The editor is to be congratulated on the contributors whom he has obtained for the first number of the new series. Professor Virchow writes on General Therapeutics; Professor E. von Leyden on Nourishment in Acute Fevers; Professor Senator contributes Remarks on the Hygienic and Dietetic Treatment of Chronic Diseases of the Kidney, with especial reference to Climatic Treatment; Professor Schrötter furnishes a paper on the Therapeutics of Arterio-sclerosis; Professor A. Fränkel writes on the Treatment of Pneumonia with Large Doses of Digitalis; and Professor Eulenburg on the Work Cure (*Arbeitskuren*) in Nervous Diseases. In addition abstracts are given from various publications.

The Journal of Physiology. Edited by MICHAEL FOSTER, F.R.S., and J. N. LANGLEY, F.R.S. Vol. XXIII. No. 4, Nov. 25th, 1898, price 5*s.*; and No. 5, Dec. 30th, 1898, price 4*s.*—The contents of these numbers are as follows:—In No. 4: 1. Dr. F. Gowland Hopkins and Mr. W. B. Hope of Guy's Hospital on the Relation of Uric Acid Excretion to Diet, with 10 figures. 2. J. H. Elliott, M.B., of Toronto on a New Proteid Reaction. This consists in the application of dilute sulphuric acid to proteids which stains them of a blue violet colour when allowed to concentrate slowly. 3. Dr. Harry Campbell on the Resistance to the Blood-Flow. 4. Professor E. A. Schäfer on the Alleged Sensory Functions of the Motor Cortex Cerebri. 5. Dr. William J. Smith Jerome on the Relation of the Degree of Acidity of the Urine and the Percentage of Uric Acid therein contained to the Precipitation of the Latter in the Form of Uric Acid Gravel. 6. Professor J. Burdon Sanderson: the Electrical Response to Stimulation of Muscle, being the second part of the essay on the Monophasic and Diphasic Variation of the Sartorius, with a plate and eleven figures in the text. The first article in No. 5 of the Journal is by W. B. Hardy, M.A., of Caius College, entitled Further Observations upon the Action of the Oxyphil and Hyaline Cells of Frog Lymph upon Bacilli, with ten figures in the text. 2. Dr. Ralph Stockman and Dr. E. D. W. Greig on the Action of Arsenic on the Bone Marrow and Blood, with a plate. 3. Dr. Charles J. Martin on Cortical Localisation in Ornithorhyncus, with four figures in the text. 4. Dr. M. S. Pembrey and Dr. B. Nicol on Observations upon the Deep and Surface Temperatures of the Human Body, with two figures. 5. Dr. J. N. Langley on Inhibitory Fibres in the Vagus for the End of the Œsophagus and the Stomach. To this number are appended the Proceedings of the Physiological Society.

The Quarterly Journal of Microscopical Science. Edited by Professor E. RAY LANKESTER, Professor ADAM SEDGWICK, and Professor W. WELDON. New Series, No. 163. Vol. XLI. Part 3. London: J. & A. Churchill. Price 10*s.* — The articles contained in this part are five in number and are as follows: 1. The Development of the Pig during the First Ten Days, by Richard Assheton, M.A., with four plates. 2. The Structure of the Mammalian Gastric Glands, by R. R. Bensley, B.A., M.B., of Toronto, with a plate. 3. On Certain Green (Chlorophylloid) Pigments in Invertebrates, by Marion Newbigin, D.Sc., of Edinburgh, with two plates. 4. Note on a (Stomatopod?) Metanauplius Larva, by J. J. Lister, M.A., of Cambridge. 5. On the Nephridia of the Polychæta, Part 2, Glycera and Goniada, by Edwin Goodrich, B.A., of Oxford, with four plates.

The Grant Medical College Magazine.—This is the journal of the Grant Medical College Gymkhana and it reached its second number in December, 1898. The most noteworthy article in the number before us is a supposed case of Moveable Kidney reported by Mr. K. M. Pardhy. All the symptoms pointed as surely as symptoms can to an abdominal tumour being a floating kidney, but when an exploratory incision was made for the purpose of fixing the kidney if it was floating the kidney was found in its proper place and the tumour turned out to be a portion of the ileum affected with tuberculous ulceration. Mr. B. R. Khandekar reports a case of Tetanoid Spasms in a woman, aged twenty-three years, due to intestinal worms.

THE VACCINATION ACT.—The Kingsbridge (Devon) Board of Guardians at their meeting on Dec. 31st decided to support the petition to Parliament for the repeal of the new Vaccination Act.—The Cirencester Board of Guardians have passed a resolution protesting against the new Vaccination Act.—The Bedminster (Bristol) Board of Guardians at their meeting held on Jan. 3rd decided to petition Parliament to repeal the new Vaccination Act.—The Pontypridd Board of Guardians at their meeting on Jan. 4th decided to petition Parliament to repeal the new Vaccination Act.

THE ROYAL HOSPITAL FOR DISEASES OF THE CHEST.—Sir Squire Bancroft, with a view to helping the Royal Hospital for Diseases of the Chest, City-road, in its work, has promised to tell the story as arranged by himself from the author's text of Charles Dickens's "Christmas Carol" at the St. George's Hall, Langham-place, W., on the afternoon of Thursday, Jan. 19th. Mr. Hope Morley, the treasurer of the institution, will preside and tickets, which are 10*s.*, 5*s.*, and 2*s.* 6*d.* each, can be obtained from the secretary.

THE LANCET.

LONDON: SATURDAY, JANUARY 14, 1899.

THE promoters of the Midwives Bill have lost no time in drafting a Bill (now called "A Bill to Promote the Better Training of Midwives and to Regulate their Practice") intended to meet the views of the General Medical Council as expressed with practical unanimity in the report of the Council at its April meeting of last year, and discussed afterwards at the conference between a committee of the Council and a deputation from the Midwives Bill Committee. This Bill bears on the face of it new features, and comes before the profession and will come before Parliament with a claim to consideration which its predecessors lacked—the claim that it has been shaped more or less to accord with the views of the General Medical Council. We propose to inquire at this stage how far the Bill answers to the new intentions of its framers and is any guarantee that they will endeavour loyally to secure the enactment of those principles which were not embodied in their previous Bills, and the absence of which involved the opposition of the General Medical Council. And the support of the General Medical Council will, we take it, be entirely conditional on this loyalty. The innovations in the Bill must be supported in Parliament by its promoters as of the very essence of the Bill and without which it must not pass. Nor does it follow that because the Bill meets the requirements of the General Medical Council it will be a grateful measure in every detail to the medical profession. It is not the authority of the General Medical Council that is at stake or, for that matter, the interests of the medical profession, but the lives of women; and, as we have said on a former occasion, the proposed legislation will lack all justification if it continues to allow an ignorant and perhaps drunken and incompetent woman to hold herself out as a midwife. Such behaviour must be penalised.

The essential views of the General Medical Council as put forward in the report of the Midwives Bill Committee, adopted, were:—

(*a*) That every woman *engaging for gain in practice as a midwife* should be subjected to legal regulation and control.

(*b*) That the mere prohibition of titles without making illegal the practice of midwifery by unauthorised persons was not a sufficient safeguard to lying-in women.

(*c*) That all conditions and regulations framed by a Midwives Board for the Control of Midwives should be submitted to the approval of the General Medical Council and the issue of such conditions and regulations when so approved by the Local Government Board to the local sanitary authorities.

(*d*) That every woman before beginning to practise as a midwife in any district should obtain the licence of the local sanitary authority of the district, renewable annually and revocable any time on infringement of regulations.

(*e*) That any unlicensed woman, whether calling herself a midwife or not, who, not being registered under the Medical Acts, practised as a midwife for gain should be liable to a substantial penalty.

(*f*) That evidences of character, training, and experience should be forthcoming in case of applicants for licences.

(*g*) That licensed midwives should be under obligation (by regulations) to secure immediate qualified medical assistance in every case presenting symptoms of difficulty or abnormality.

Another requirement of the General Medical Council was that direct provision should be made in the Bill to reimburse the Council for any expenditure incurred in duties under the Bill. This has been ignored.

These were the principles which, in the opinion of the General Medical Council, should underlie any legislation on the subject of midwives. Their essence is this: that midwifery is a part of medical practice, calling for full knowledge of the principles of medicine and surgery—that there must be a clear recognition of the distinction between a mere midwife and the medical practitioner and that she is to act in midwifery an entirely subordinate part, with sharp limitations to be defined in the regulations; and that any violation of the regulations will render her liable to removal from the roll of midwives.

How far does the new Bill embody these principles and secure their recognition in the future? On the whole the Bill meets the requirements of the Council. Existing midwives will be required to show not only that they have attended cases but to produce evidence of character and of being in *bonâ fide* practice as midwives. Mrs. GAMP was in *bonâ fide* practice, but the necessity of adducing witnesses to character would exclude her from the new roll. The Council, however, asked for evidence of training also, but the Bill does not provide for this. Secondly, obstetric assistance may be rendered by anyone in an emergency, but the habitual practice for gain of midwifery by an unlicensed woman not a registered medical practitioner will expose the offending person to a fine of not more than £5, as the false use of titles also will. Thirdly and fourthly, licensing is substituted for registration, renewable annually and besides the licence of the Midwives Board a midwife must get a certificate from the local sanitary authority in whose area she means to practise. The constitution of the Board is altered for the better. The Midwives Board of this Bill will consist of only 6 members, of 4 registered medical practitioners appointed respectively by the Royal College of Physicians of London, the Royal College of Surgeons of England, the Society of Apothecaries, and the Incorporated Midwives' Institute, and 2 other members to be appointed by the Privy Council. The claim of the body which has no professional knowledge to have as much representation on the Midwives Board as the medical corporations is one to which we demur, however it is all for good that the Board should be so much smaller. It will be at least predominantly a medical body and its regulations will be subject to the approval of the General Medical Council. We cannot, however, regard it as satisfactory that so much is left to the discretion of the Midwives Board. Such vital matters as the distinction between the functions of a midwife and those of a medical man, the obligation of a

midwife to send for a medical man on the occurrence of anything unusual, and the obligation of the local sanitary authority to make such arrangements as will secure the ready help of a registered practitioner should be, and we hope still will be, matters of direct provision in the Bill. The opportunity of the presence of such a Bill in Parliament should not be lost also in another direction. A specific clause to make it illegal for a midwife to certify still-births should be inserted. The promoters of the Bill anticipate that the modifications introduced to meet the views of the General Medical Council will excite much opposition both in and out of Parliament. It may be so, but we trust that the Government will refuse to be any party to a Bill which does not include these modifications. There will be other opportunities of discussing the Bill more in detail which we shall take as they arise.

THE reports which have reached us of the severe epidemic of influenza now raging in New York and the undoubted existence of outbreaks of "febrile catarrhs" (to use a term sometimes employed) now attacking whole families simultaneously in this country have again drawn attention to the nature and means of extension of this disease. Influenza, although in itself not usually a serious complaint, yet in virtue of its complications and sequelæ may prove a most disastrous one and not unnaturally the prospect of another pandemic such as occurred in 1889 and 1890, or of further local epidemics such as have since been experienced, gives rise to no little popular alarm. The name "influenza" seems to have a strong attraction for some people. Every ache and pain, no matter where located and whether accompanied by fever or not, is at once put down as "influenza"; every headache, every coryza, every sore-throat, every attack of gastro-enteritis, from whatever cause is promptly self-diagnosed as "influenza," and when the practitioner arrives upon the scene he will be expected to fall in with this view, and there is a great temptation to do so. The disease is so protean in its forms that it is no cause for surprise that the patient arrives at the above conclusion. A little investigation, however, may show that many of the so-called "gastric cases" can be ascribed to errors in diet, whilst the general history of other cases would indicate that similar attacks of headache, sore-throat, or coryza have occurred at intervals throughout the patient's whole lifetime, at any rate many years previously to 1889, at which time the modern history of this complaint as regards England begins. A certain number of cases characterised by rise of temperature with some amount of general malaise are frequently met with and were encountered long prior to 1889, but there is no evidence that these are influenzal in nature. For want of a better term the condition is described in text-books as "febricula"; the symptoms disappear in a few days and the patient recovers. At the same time such maladies should be carefully watched in case they should be mild cases of influenza and evidences of complications should be at once investigated.

The publication of the fifteenth volume of the "Twentieth Century Practice of Medicine" comes opportunely for it contains a most valuable article on Influenza by Dr. DITMAR FINKLER. The article forms, indeed, one of the best monographs on influenza which we have yet met with. In reference to the remarks which we have already made we quote the following from Dr. FINKLER'S observations on "Local Epidemics." "I am inclined to accept the view of LEICHTENSTERN that there exists a pandemic influence caused by PFEIFFER'S bacillus and also an epidemico-endemic influenza of identical nature which develops after the pandemic infection has run its course, being caused by the germs left by the latter. ..... The occurrence of various forms of catarrhal fever, which are often called grippe or influenza by physicians and laymen, is something altogether different. Sporadic cases of coryza and bronchial catarrh should never be mistaken for influenza, although the symptoms of influenza may here be imitated in an exquisite manner. I have examined whole series of such cases, but have never been able in a single instance to demonstrate PFEIFFER'S influenza bacillus."

The question, then, arises—Can the diagnosis of influenza be based on the microscopical finding alone of the influenza bacilli? Dr. FINKLER maintains that under certain conditions this question may be answered affirmatively and he states that anyone who has occupied himself largely with these bacilli will rarely err when he sees them in a sputum preparation. He adds, however, that it is most desirable to establish the identity of the bacilli by culture if every doubt is to be excluded, for this method leads to the certain demonstration of the influenza bacilli often more rapidly than does the microscopical examination. According to these investigations doubtful cases of influenza should not be diagnosed as such unless a bacteriological examination has demonstrated the presence of PFEIFFER'S bacillus, following the plan now uniformly adopted in uncertain cases of pulmonary tuberculosis and diphtheria. Such a course would prevent the indiscriminate diagnoses now occasionally made according to the particular physician's own ideas of influenza rather than by the recognition of a disease having definite characteristics. We have not been able to discover in Dr. FINKLER'S paper any mention of an apyrexial form of the disease, and we believe such cases to be extremely rare even if they exist at all. We are aware that in the opinion of some physicians they do occur but we are not aware of the grounds upon which the statement is made, nor should we be satisfied with the reasons unless a bacteriological examination had corroborated the diagnosis.

ANY article by Professor J. P. MAHAFFY is pretty sure to be worth reading. We may not always agree with him or think his tone particularly judicial; but he is always pithy and piquant, he has something to say that is individual and characteristic, and he speaks his mind with an undeniable frankness. All these qualities are conspicuous in his article in the *Nineteenth Century* upon "How to Prevent Cramming." He refers more specifically to Irish secondary education, but his remarks have a wider application than their immediate object and may not be without a certain suggestiveness in relation to the teaching of medicine.

What is cramming? It may be roughly defined as the art of preparing candidates to pass their examinations successfully without having really assimilated the knowledge

imparted to them and made it a permanent part of their intellectual life. The teacher trains, the crammer imparts information which will pay in the examination room. As Professor MAHAFFY says, "The teacher makes the permanent improvement and development of his pupil the real end or object of his work, in aid of which competitions, prize lists, and exhibitions are merely a test and a means. The crammer makes the prize list his real end and the pupil only the means whereby he may attain honour, money, success for himself, and if he can show a splendid list of examination successes he cares not what becomes of his pupils in after-life. He has done his best with them so long as they were preparing for a special examination. He has played the game of competition and has won. He is not concerned about the rest." This is a somewhat extreme statement of the case, and we would prefer to believe that the average crammer retains some small modicum of the milk of human kindness and is not absolutely indifferent to the future welfare of his pupils. But his radical vice is the preferring of immediate gain to real development of intellect and character and of appraising the knowledge not for its inherent worth but just in so far as it can be made to pay. The question at once arises whether examinations properly conducted by able and conscientious men cannot be so arranged as to distinguish between crammed knowledge and real knowledge, between the candidate who has been simply drilled to answer with mechanical accuracy and the candidate who has fully assimilated his materials and adjusted them to his total mental equipment. This is the crucial question upon the answer to which everything depends. "It is impossible to abolish examinations. They are, in the first place, a distinct test, though a rude and insufficient one, of good and bad teaching. In the second place they are the only test which the public understands and in which therefore it has confidence. ..... We must therefore not attempt to abolish examinations, but to reform them so as to leave good teachers the maximum of liberty, and give weight to quality and not variety of answering." The proper conduct of examinations is one thing and a most important thing, but Professor MAHAFFY also lays much stress upon the proper inspection of schools by independent inspectors, entirely removed from local, sectarian, or other jealousies. In the medical world something has been done to secure inspection of examinations, but very little has been done to secure inspection of academic and clinical teaching. We believe that much remains to be accomplished in this regard and that the best results might be fairly expected to follow from proper inspection of the medical student's training on both its sides.

Some of Professor MAHAFFY'S remarks upon the teaching of modern languages have an interest for medical readers, inasmuch as some knowledge of this subject is required for the medical curriculum in most of the universities. "We learn the classical or so-called dead languages for the sake of their matchless literature and for the sake of their logical and strict grammar; we learn the modern for use, for speaking, writing, reading them, and understanding them when spoken. The use of Latin grammar is to learn grammatical principles which can be applied to many languages; the use of German grammar is merely to understand German and no one would think of studying it for any other purpose. Hence in the learning of modern languages grammar should take a very subordinate place and *use* should be the object always in view." This is, we believe, true and important. The much-weighted medical student cannot in these days spare time to acquire a thorough grammatical and philological knowledge of French and German. But if he aspires to any career higher than that of ordinary general practice it is most important for him to be able to read these languages with facility. Learning to speak them, though most desirable, is, on the whole, a secondary matter. It is not everyone who travels; and even in the case of travellers it is astonishing to find the extent to which English has become a sort of *lingua franca* upon the Continent and how little real inconvenience is felt by many who travel with the command of no language but their own. No doubt this is to be deprecated and is something of a slur upon anyone who has had a liberal education, but our point is that for practical purposes what the aspiring medical student needs in this department is simply the power to read French and German with ease and readiness, so that the very important medical literatures of those countries may be accessible to him without the aid of translations. Upon the whole, we conceive that medical education is much less open to the charge of cramming than that of most other departments. Some of the subjects can hardly by any possibility be crammed. We once knew a very clever student who detested dissecting and who yet contrived to pass brilliantly in anatomy by means of an elaborate system of mnemonics devised by himself; but we imagine such cases are excessively rare. To cram clinical knowledge is almost a contradiction in terms. The stress now thrown upon practical laboratory work, the tendency to discourage systematic lectures and to rely more upon bedside teaching, the discrediting of mere book knowledge,—all this tends to the confounding of the medical crammer. Examining students in mere "tips," attaching importance to names rather than things, allowing the opinions of examiners—as opposed to recognised scientific doctrine—to have full play,—these things still find a place at some medical schools, and create a function for the crammer, but it cannot be too much insisted upon that such practices are opposed to all sound principles in medical education and can be persisted in only from ingrained prejudice or deliberate wrong intention.

SINCE we last commented in these columns on the cases of COLLINS and WHITMARSH the sentence of the latter has been fixed by the Home Secretary at penal servitude for twelve years as against the seven years allotted by Mr. Justice GRANTHAM to COLLINS, and the sentence of death passed by Mr. Justice PHILLIMORE in the later case of WARK has now been reduced to one of penal servitude for three years. The term meted out to the last-named criminal seems to fairly satisfy the exigencies of the case. It may seem severe in comparison with the sentence upon COLLINS and so may the fate of WHITMARSH, but it must be remembered that the Home Office has its own precedents to follow and cannot allow itself to be influenced by the views of a particular judge in another case than that

under its consideration. No one conversant with the practice in such matters can have seriously expected a free pardon to be granted in a case in which a question of fact had been carefully tried before a judge and jury and where no additional evidence has been since adduced. Many of those who have agitated with a view to the immediate release of WARK and have been surprised to find their petitions ungranted must have forgotten the sources of information at the command of a Home Secretary that place him in command of particulars which are not made public in a court of law but which rightly influence his decision. Many, too, must have failed to consider how important it is that the verdict of a man's twelve peers, even if adverse to him, should not be overridden by the opinion of any official however highly placed, unless, as we have said, the official has evidence before him that was not before the jury tending to prove innocence. It seems to us that so far from the Home Office being called upon to exercise its powers more markedly than it has done far too much is now expected from it and done by it in such cases as these.

In this connexion we note that it was at Liverpool, where the WARK case was heard, that the last trial took place in which the sentence of death passed upon a criminal abortionist in England was carried out. This was in 1875, the man being an unqualified practitioner of the name of HEAP. The late Baron POLLOCK tried the case and he expressly said that the facts, if proved, constituted murder and nothing else, while the law has, we believe, been similarly laid down in all cases of the same nature until the present year. On its being found that HEAP was to be hanged efforts were made to obtain a reprieve, and the foreman of the jury who had recommended him to mercy made a public statement that had the jury known that the capital sentence would be carried out they would have found a verdict of manslaughter. The judge, however, had held out no hope of mercy, there was a previous conviction for abortion against HEAP, and the Home Office was inexorable. In the years following the case of the man HEAP there were convictions for similar crimes (there had been none for some time before that case)—that of CORNELIUS ASHER, a herbalist at Leicester, in 1876; that of ANN CARTLEDGE, a midwife, in 1877; another of a woman in 1879; two separate cases in 1880 (the two COLMERS and an unqualified practitioner named HAYWOOD); and the case of a chemist named HOLLIS in 1882,—in all of which reprieves followed. In all of these cases, in spite of the recent precedent of HEAP'S case, the death sentence was not carried out and in them, and in all such cases since, the Home Secretary, and not the judge who tried the case, has fixed the penalty for the crime. This crime has been, technically, murder, the jury only convicting because ignorant that a death sentence would be passed or expecting confidently its commutation. The difficulty of persuading the jury of even the technical guilt of murder on the part of the prisoner is shown by the way in which the law has been laid down in the three recent instances already referred to. According to the Attorney-General in the COLLINS case (and apparently the judge took the same view), "if the act done was not in itself of necessity dangerous then the jury might find a verdict of manslaughter and not murder." According to Mr. Justice BIGHAM in the WHITMARSH case, "If the jury could bring themselves to think—he did not see how they could—that though the prisoner might have administered the injection yet nevertheless as a reasonable man he could not have contemplated that it would result in death, it was competent for them to say that he was not guilty of murder but that he was guilty of the lesser crime of manslaughter." According to Mr. Justice PHILLIMORE in the WARK case "if a person committed any felony on the body of anyone to whom thereby death resulted he was guilty of murdering that person."[1] It is in consequence of such conflicting and irreconcilable enunciations of the law that we have urged the desirability of legislation with regard to cases of what is sometimes known as "constructive murder," a convenient term against the use of which Sir FITZJAMES STEPHEN once emphatically protested. Failing this we have suggested the possibility of a uniform practice of indicting for manslaughter, except perhaps in such exceptionally heinous cases as may possibly arise. The object of such legislation or practice would be to produce consistency and prevent the possibility of a criminal being acquitted through sympathy or prejudice. It is quite another matter to urge that a jury's verdict should be rendered wholly ineffective where it simply amounts to a finding that whatever crime the acts committed involve the prisoner was privy to it. To do this would be highly undesirable, even if the judge trying the case admittedly assumed a responsibility in directing the jury from which some of his colleagues would have shrunk.

Annotations.

"Ne quid nimis."

BRITISH ACTION AS TO PLAGUE.

WE are glad to be able to announce that the action taken by the British Administrator of our East African possessions was suspended on Jan. 8th and this we may assume means that it was cancelled. The mere fact that the governor of a British possession should repulse a vessel on which there existed an infectious disease such as plague and order her out to sea to return to the port whence she came, without so much as seeing that over 1000 people on board should run no further risk of infection and should not remain a single day without ample medical appliances and provisions, was an act which we did not hesitate to style "astounding." Even if all these precautions could possibly have been taken the action would have been wrong in principle and thoroughly bad in practice; and the only plea in extenuation of having acted thus in a state of panic would be that which should properly be regarded as inexcusable—namely, an utter neglect of measures of preparation in the case of a port which for over twelve months has been in constant communication with plague-infected ports of India. The final decision with regard to the *Bhundara* is not yet made known, but we learn from Karachi that there has for many days past been no further case of plague on board. Hence such elementary sanitary organisation as must surely exist in a country which is constantly shipping railway employés from Karachi and Bombay, and where large works under British supervision are being carried on, ought to suffice to control a disease

[1] We quote the dicta of the Attorney-General and of Mr. Justice Bigham from the *Times* reports of these cases, while the words of Mr. Justice Phillimore are as given in the *Liverpool Daily Post*.

which has for two years been kept from spreading from the native to the British quarters of even a great city such as Bombay. The Venice Convention lays it down that no country accepting its provisions shall be without a port organised to carry out the terms of the convention. This means that no such country shall have even the excuse for repelling a vessel, and this country cannot afford, even in East Africa, to revert to an attitude of a past generation which was characterised by ignorance as to the meaning and significance of infectious disease.

THE CENTENARY FESTIVAL AT ST. PETERSBURG.

THE brief account of the centenary of the Military Medical Academy given in an annotation in THE LANCET of Jan. 7th extended to the ceremony of Dec. 30th, 1898, at which the congratulatory addresses of the delegates were presented. On the evening of that day a ball was given and some of the delegates afterwards drove down the Neva in troikas to spend the very early hours of Saturday morning (Dec. 31st) in a well-known and popular cave of harmony. On the same day at midday an opera (*Le Prince Igor*) was given to a crowded audience at the Imperial Theatre. An interesting feature of this performance was that the opera was composed by Dr. Borodine, a late professor at the Medical Academy. In the evening a banquet was given. At this splendid entertainment the French delegates were to the right of the President, the Germans to the left, the British representatives being opposite to them. On Sunday (Jan. 1st, 1899) a visit was paid to the large non-military hospital associated with the Imperial Academy and to the Physical Laboratory over which the delegates were shown by the kindly Dr. Danilevsky who showed many experiments with liquid air and demonstrated an extremely clever apparatus by Zeiss by means of which images of small opaque bodies could be perfectly reproduced upon the lecturer's blackboard or screen. The chief part of Monday was spent in a tour of inspection through the immense establishment on the islands at which all the instruments, splints, dressings, and apparatus are made for the army. This was followed by a luncheon at which speeches of congratulation were made. The chair was occupied by Dr. Remmert, the chief inspector of the imperial army. On Wednesday, Jan. 4th, a miniature review was held by the Czar in an enormous riding school, and on its conclusion the delegates had the great honour of being presented one by one to his Imperial Majesty. Some of the French delegates whose return from a hurried visit to Moscow was delayed by a snowdrift were so unfortunate as to miss this important part of the proceedings. But all the British representatives were there—Rev. H. S. Cronin, Mr. Cross, Dr. Ferguson, Professor Ogston, Mr. Owen, and Professor Shipley. Throughout the entire series of functions the Minister of War showed by his presence that he deemed the Army Medical Department of real importance to his country. He expressed considerable pleasure at receiving congratulatory remarks from his visitors. It evidently gave him particular satisfaction to read out at the banquet before 500 guests a congratulatory telegram which arrived from the German Emperor. Amongst the Russians who specially endeavoured—and that with great success—to render the visit of the British delegates successful and pleasant may be mentioned Dr. Alexis Likhatscheff, Mr. Berthenson, Mr. Sellheim, Professor H. Turner, Mr. Wyllie, Dr. Slifosoffski, and the Medical Superintendent of the Hospital of the Academy. Greatly to the regret of every one, Russian and foreign, the President of the Academy, Dr. Pachoutine, was laid up by a severe attack of influenza. He may, however, be sincerely congratulated on the perfect way in which his arrangements were made and carried out and upon the great pleasure and enjoyment which he ensured for his foreign guests. It is to be hoped that now the festival is so successfully ended he may find the opportunity of taking needful rest and of completing a perfect convalescence. The delegates begged leave to offer him "a very happy new year" which, according to the Russian style, began on the 12th of this month.

THE USE OF THE CAT.

WE have received some publications from the Humanitarian League all pointing out how inhuman it is to flog ruffians who assault and batter passers-by in the streets. Flogging is objected to because it degrades the criminal and also the community by whose will the flogging is inflicted. We do not for one moment accept either of these arguments. The average rough cannot be degraded, although he has a very wholesome regard for his skin. We append a report from the daily press of a case tried on Jan. 5th at Marylebone Police Court in which two Kilburn ruffians were charged with assault. The evidence was as follows: "It appeared that about twelve months ago the prosecutor and the younger prisoner had a dispute. Between 7 and 8 o'clock on Boxing Night the former was walking home by himself along the Lonsdale-road and was turning a dark corner when he was suddenly set upon by six or more rough-looking fellows, including the prisoners, all of whom grossly maltreated him. The prisoners, who were evidently the ringleaders, pummelled him savagely about the face, after which he was felled to the ground by a violent blow in the eye and while still on the ground the elder prisoner kicked him in the mouth, loosening all his front teeth, and the younger kicked him about the legs. In the end he was rendered unconscious and upon coming to he found all the men had disappeared." Now it is to this kind of person, we contend, that a flogging is the most effective punishment. As a matter of fact the prisoners were sentenced to two months' hard labour during which time the country will have to pay for their keep and lodging. Humanity is wasted upon creatures of this sort.

NETLEY AS A SCHOOL FOR TROPICAL MEDICINE.

IN THE LANCET of Dec. 31st, 1898, we drew attention in detail to the advantages that Netley would offer as a school for tropical medicine could the necessary arrangements with the War Office be made. In the *Times* of Jan. 6th is a letter from Dr. John Anderson who obtained permission from the War Office to apply to the principal medical officer at Netley for a return showing the number of cases of tropical disease available at the Royal Victoria Hospital for the instruction of candidates for the Colonial Medical Service. Full statistics were furnished enumerating the number of patients suffering from tropical disease who were admitted during the years from 1892 to 1898 (to Nov. 30th) inclusive. The figures show that whilst the clinical material for teaching beri-beri is clearly insufficient (this being naturally due to the fact that Europeans rarely suffer from this disease), the advantages offered in other forms of tropical disease are much greater than in any other hospital in Europe. The number of cases of ague and remittent fever in 1897 were 176 and 25 respectively, and in 1898 were 402 and 83. The advocates of the establishment of the proposed school for tropical medicine at the Branch of the Seamen's Hospital at the Albert Docks have made a *point d'appui* of the fact that during the year ending Nov. 30th last 31 cases of malaria were admitted into that hospital. This number should be compared with those quoted above. Again, in THE LANCET of Nov. 19th last we mentioned that in twenty-five years only 50 cases of hepatic abscess had been treated at

the Seamen's Hospital, whilst at Netley in 1897 there were 33 instances of this disease, and in 1898 (to Nov. 30th) there were 86 cases of "inflammation of the liver" and 20 of "other hepatic diseases." We may also draw attention to the number of cases of "simple continued fever" and of "Mediterranean fever" which were under treatment. The figures quoted by Dr. Anderson add strong support to our contention that although every assistance should be given by the profession to Mr. Chamberlain's scheme, yet the size of the hospital at the Albert Docks (and we are not forgetting the proposed extension) and the number of tropical cases admitted do not justify the proposed large expenditure. We do not deny that it affords a most valuable additional place of study for medical men preparing to reside abroad, but we do protest against the laying out of large sums of money when there already exists such a well-equipped and in every way suitable establishment as Netley.

PRESERVED GLYCERINATED CALF-LYMPH.

IN another column a correspondent draws attention to the fact that at the present time those who are working at the production of lymph do not fully understand the conditions under which the most active and reliable vaccine lymph is obtained from either the calf or the child. Although this is undoubtedly the case it must not be forgotten that certain general information has been obtained which has all gone in the direction of ensuring the production of a fairly and usually a very reliable lymph which when carefully collected and prepared by glycerination retains its original potency for a considerable period and then loses its active properties but slowly. For example, it is now known that the age of the calf is a somewhat important factor, its state of nutrition and general health are others. Then, as our correspondent points out, the season of the year and the state of the weather exert a marked influence on the lymph obtained. In connexion with these two latter factors, however, it should be borne in mind that the calf, like the child, is very susceptible to "warm weather diarrhœa," to rises of temperature due to slight digestive disturbances or irritation from heat, and it has long been recognised both in England and Germany that these slight derangements have a marked effect on the quality of the lymph collected. Taking all these facts into consideration it would appear then that the preparation of reliable lymph is by no means such a haphazard process as is sometimes maintained. It is suggested that glycerination and bacteriological examinations are superfluous refinements unless we can be sure that the vaccine matter has a certain "strength" to commence with. This we should hold is by no means proved. A clear active vaccine if kept for even a short time may, as has often been pointed out, become quite cloudy, and as this cloudiness becomes more and more marked two things occur which certainly cannot be disassociated—(1) the number of micro-organisms present becomes enormously increased, and (2) the activity of the virus rapidly falls. Glycerination then, in so far as it not only prevents the growth of micro-organisms but actually brings about a diminution in their numbers, conduces to the preservation of the orignal activity of the vaccine lymph and therefore to the chance of a larger proportion of successful insertions. In regard to our correspondent's assertion that it is impossible to tell from a post-mortem examination of the calf whether the vaccine is likely to be "good" or not we would point out that the animal is not killed with that object. The post-mortem examination is made for the purpose of determining that the animal during life has suffered from no specific infective disease—e.g., tuberculosis—which might under certain conditions be transmitted through the medium of the lymph. At the same time the fact must not be lost sight of that slight intestinal or gastric disorders or vascular disturbances—local congestion and the like—should always be carefully looked for and taken into consideration in connexion with the probability of the lymph proving to be of reliable quality or not. As matters stand at present it is evident that opinion is in favour of the use of calf-lymph carefully prepared and collected and treated with from five to eight times its bulk of 40 or 50 per cent. pure glycerine, as against arm-to-arm vaccination and we believe that as time goes on this opinion will be strengthened.

THE CHURCH MILITANT.

WE are always glad to be able to chronicle instances of prompt and brave action by the clergy in times of plague and sickness. Everyone knows the story of Mompesson, the rector of Eyam, during the plague time in the seventeenth century; of Belzunce, the Bishop of Marseilles, during the great plague in the eighteenth century; and of many of the East-end clergy during the cholera in 1866. These are all instances of devotion and now comes a story from a little Essex village exhibiting the same features. The village is White Roding and the rector is James Edmond Long. A week or two ago he noticed some cases of illness among children and also that the sanitary state of some cottages was very bad. Being a man of action he called upon the owner of the cottages and together with the district councillor inspected the back premises of the cottages in question. On Dec. 23rd he drove to Dunmow and hunted up the sanitary inspector who went next day and served notices on the occupiers to abate the nuisance. On Christmas day a child was found to be very ill; on the day after a man succumbed, and altogether there were some 16 cases of undoubted diphtheria. On Jan. 1st the child died and the parents were both very ill as well as the other 5 children. No one would see to them; the rector measured the child for the coffin, got the coffin made, took it to the house, laid the body in with his own hands, and then took both coffin and corpse to the rectory where he kept it until a grave had been dug. The father died on the same night. His coffin was placed on a trolley which the rector helped to drag to the graveside. If this is the behaviour of British villagers in a mild epidemic of diphtheria it is fair to ask, How would they behave in a small-pox epidemic? And we shall probably not have to wait long for an answer to this question. The parishoners of White Roding may congratulate themselves upon the devotion of their rector, for without his action they would have been in sore straits.

A NEW METHOD OF ENUMERATING THE SUDORIPAROUS GLANDS.

A NEW way of counting the sudoriferous glands in the human subject has been devised by Dr. Eijkmann, of the Dutch Colonial Service, who is stationed in Java. Our description is abbreviated from that of Dr. H. Gros in a recent number of the *Archives de Médecine Navale*. The spot selected for examination having been sedulously washed with soap and water and still further cleansed by means of alcohol and ether, an alcoholic solution of fuchsine is poured over it and allowed to dry, the drying process being accelerated by fanning. A sheet of fine white paper is then closely applied and maintained in apposition by an evenly adjusted flannel bandage, great care being taken to avoid creases and folds. On removal after a few minutes the paper will be found thickly studded with red stains, each stain representing the aperture of a sudoriferous gland. The fuchsine has no effect on the parts that keep dry, but wherever the paper has been moistened by a drop of perspiration there will be a mark. A whole series of "proofs" can be "pulled" in this way without any need to renew the

fuchsine. In determining the number of glands the system adopted for counting the red corpuscles of the blood may be employed. Dr. Eijkmann has examined the skin of the palm of the hand, the forehead, the sole of the foot, the forearm, the arm, the thigh, the back, the leg, and the anterior surface of the thorax in two Malays and three Europeans. On an average of the whole body he found 160 sweat glands per square centimetre of skin in the former and 162 in the latter; but the distribution varied greatly according to situation, the palm of the hand and the brow being the parts which are most thickly studded. As far as the sudoriparous system is concerned there would therefore seem to be little or no difference between Caucasians and their more dusky brethren, but the number of subjects experimented upon is too small to admit of generalisation and, moreover, sweat glands vary greatly not only in size but also as to their secretory capacity.

A SENSIBLE DISTRICT COUNCIL.

THE Urban District Council of Malvern has through its clerk, Mr. William Lambert, issued the following notice to the medical practitioners in the district:—

"BACTERIOLOGICAL TESTS—SUPPLY OF IMMUNE SERUM.

"I am directed to inform you that the Council will be prepared to pay for the distribution of serum for the treatment of diphtheria and the application of bacteriological tests for the diseases of diphtheria, typhoid fever, and tuberculosis in those cases where the persons are unable to bear such expense themselves. I may remind you that the bacteriological tests in question are carried out at the County Laboratory at the Shirehall. "Yours truly,

"WM. LAMBERT."

The District Council through its medical officer of health provides serum and has appointed a bacteriologist in Worcester to examine and report on disease products for medical practitioners in its district. Malvern is one of the few places in which measles and pertussis are notifiable. These facts show the advantages to a community of having a medical man free from the restrictions of practice as chairman of its District Council and working energetically with a medical officer of health for a large area, and also independent of practice, for the public good. Malvern is a well-known and popular health resort. It deserves this reputation evidently not only on account of its natural beauties but also from the energy of its sanitary authorities.

"PULSATION OF THE FOOT" AS A DIAGNOSTIC SIGN.

DR. TATTI of Buenos Ayres has published some researches on the "Pulsation of the Foot," which phenomenon he thinks is calculated to be of service in diagnosis. The term pulsation is applied by him to the slight rhythmical movement of the foot which is observed when one leg is crossed over the other by a person in a sitting posture. Though it can be detected by simple inspection it can hardly be observed adequately for clinical purposes without the aid of an instrument constructed on the same lines as the cardiograph. Dr. Tatti gives a large number of tracings taken in this way, most of them accompanied by simultaneous tracings taken by Dudgeon's sphygmograph from the radial artery. In the normal tracing there is an oblique up-stroke; the apex of the curve is acute or slightly rounded. The down-stroke is also oblique, being straight for about the first third of its length; it then becomes sinuous and more or less horizontal. In elderly persons the apex of the main wave is more rounded and the secondary ones are smaller. In children the main wave is small and the smaller ones, which are three or four in number, diminish progressively in size. The application of cold diminishes the main wave. Modifications of the curve are observed in pregnancy, especially when there is œdema of the legs, in cardiac disease, and in various other conditions. It is, however, in arteriosclerosis that the tracing of the pulsation of the foot appears likely to prove of clinical value. Here in well-marked cases this tracing becomes almost straight. Sometimes when the radial pulse gives little or no indication of the commencement of this condition Dr. Tatti believes that important information can be obtained from the "pulsation of the foot." As to the cause of the phenomenon he has satisfied himself that the pulsation depends upon the elasticity of the small arteries and capillaries of the leg, so that in cases where this is permanently (as in arteriosclerosis) or temporarily (as in vaso-motor spasm caused by cold) interfered with the movements of the foot become less than they are in the normal condition.

TYPHOID FEVER IN THE FRENCH ARMY.

THE soldiers of France, according to the past official medical record of the army, have suffered a good deal from typhoid and other forms of fever, not only on their various military expeditions, but in their colonial garrisons and at their military camps and stations in France. Of late years, however, as we have had occasion to point out from time to time, the official returns issued by the French War Office have shown that very great improvement has taken place in this respect. This has been attributable to the greater care which has been taken to secure a good water-supply for the troops by the use of filters and other water-sterilising expedients, such as Vaillard and Desmaroux's highly ingenious apparatus. It appears that there has recently been a serious outbreak of typhoid fever at Cherbourg and especially among the Marine Infantry regiments quartered there. According to the *Temps* there were recently 300 cases of this fever in the Naval Hospital at Cherbourg and numerous deaths had occurred. The epidemic has prevailed since November and the troops deriving their water-supply from the river known as La Divette have been most severely affected. M. Lockroy, the Minister of Marine, has ordered an official inquiry into the subject. We think that on the whole less care is taken in France generally than in this country in regard to the *sources* of water-supply for drinking purposes. The fact, however, is that it is really the best and safest way to spare no pains in order to secure a good source of water-supply free from all risk of contamination and to see that the water is protected against any such contamination throughout its course until it reaches those who drink it.

THE NURSING QUESTION AT THE BULAWAYO MEMORIAL HOSPITAL.

THE Bulawayo newspapers have recently been full of correspondence dealing with the question of the nursing staff at the Memorial Hospital. Shortly the position seems to be as follows. Up to the present the nursing at the hospital has been carried out by a band of Dominican sisters who went up in the time of the Matabele war—i.e., in March, 1896—and who worked with the greatest devotion under very trying circumstances. Devotion and willingness, though both admirable qualities in themselves, especially for hospital nurses, cannot, however, in these days make up for lack of training and this training the sisters do not seem to have possessed. In May, 1897, the new resident surgeon, Dr. F. Arnold, was appointed and found matters in a state of complete chaos. Soon after an energetic secretary was appointed and the pair started each in his own department a crusade of reform. After a long correspondence between the matron on the one hand and the surgeon and secretary on the other a sub-committee was appointed to go into the whole question

of management and it was on the report of this committee that the newspaper correspondence started. This report, dated November, 1897, stated that it was agreed to accept the proffered resignation of the secretary and surgeon. The resident surgeon was, however, asked to remain for twelve months which he agreed to do. The report proceeded to recommend that a matron and seven trained sisters should be obtained. The position at the present moment seems to be that the resident surgeon has resigned but is remaining and also that the matron and sisters have resigned but are also remaining. The hospital board sub-committee suggested that three of the present staff should proceed to Europe at their own expense to be trained and that to supply their place a matron and three nurses should be obtained from Europe and that their expenses should be paid by the hospital board. However, this scheme fell through and the position remains as we have stated above.

VACCINATION LITERATURE.

WE publish in another column a letter from the energetic secretary of the Jenner Society, pointing out how much good members of our profession may do in educating the ignorant with regard to the value of vaccination. Dr. Bond encloses some of the literature to which he refers in his letter. Perhaps the most convincing pamphlet, if anything but an attack of small-pox can convince a hardened anti-vaccinationist, is one giving a reproduction of two pages of a parish register—namely, that of the parish chapel at Pudsey, Yorkshire, in the years 1781 and 1792. There are 53 burials registered on these two pages and of these the cause of death is given in 34 cases as "small-pox." All the deaths from this cause occurred in patients under ten years of age and most of them were under six years, so that this very well shows how fatal small-pox was in the last century and how it was specially incident upon children. The pamphlet in question is illustrated by a reproduction of a photograph taken in the year 1893 of two cases of small-pox treated in the Birmingham Hospital. The one, that of a child of eleven years vaccinated in infancy, shows only a few pustules on the backs of the hands; the other, that of an unvaccinated child of three and a half years, shows the face covered with a confluent eruption. The latter child died. Probably not even an attack of small-pox would convince a conscientious objector of the type of person who argued that if it were necessary for the child to be inoculated "by beast" the Creator would have done it before the child was born; but anyone not absolutely fatuous could not look on this picture without at any rate being given cause for consideration.

"KYNOMANIA."

DR. W. R. MACDERMOTT of Newry sends us a communication headed "Kynomania" dealing with the subject of dangerous dogs and the want of responsibility evinced by the owners of such animals. Without going so far as to agree with the theory which Dr. Macdermott puts forward—namely, that the owner of a dangerous dog is a dangerous or mad man—we quite coincide in his opinion that the number of dangerous dogs in this country is far too great and also that the owners of such animals do not show that contrition for the deeds of their pets which they should. In our opinion the state of the law as regards dangerous dogs wants altering. We believe that no dog can be considered dangerous and its owner punished should it bite anyone unless it can be proved that the dog has bitten someone previously. The position of allowing a free bite is to our minds wholly illogical and we also think that owners of dangerous dogs should be punished much more heavily than they are when they take no pains to keep such animals under control. Dr. Macdermott points out that it is common for boys to set dogs at strangers, "a practice which is leniently ascribed to thoughtlessness but is in reality to gratify an impulse to mischief which when pronounced and developed under absence of restraint is an insane impulse." This, it seems to us, is a *petitio principii* unless we may argue that all unrestrained impulses are insane, as perhaps we may do. The "soaring human boy" is as a rule in the mental condition of a savage but is not prone to develop into insanity as that term is commonly understood. Dr. Macdermott concludes: "To meet offences committed by dogs their owners' responsibility should not be left to be enforced by private initiative but be a matter for immediate police cognisance directed to teach sane responsibility."

DEATH BY ELECTRIC SHOCK, COAL-GAS POISONING, AND A DANGEROUS PRACTICE IN CONNEXION WITH PUBLIC SEWERS.

PUBLIC service supplies are not without their dangers, be the supply water, electricity, or gas. All three have been known to be concerned in bringing an explosion about under the pavements of our streets. Thus leakage from the water-mains may destroy the insulation of electric cables and sparking may result which would ignite any coal-gas which may be escaping from the gas-mains. Sewers also may contain an explosive mixture which should it be ignited by any means would probably rupture the pipe besides being a source of danger to those who examine the working of the sewerage systems from time to time. Only recently three noteworthy occurrences were reported in connexion with gas, electricity, and sewer services which are worth recording although they do not relate to the combination of circumstances to which we have just referred. The first case is that of the death of a man from electric shock at Southampton during the laying of a cable. It appears that a leakage was suspected in a low-tension cable which was lying side by side with a high-tension cable. On proceeding to make an examination, the discharge of sparks having been previously noticed, the poor fellow by some means, though a skilled artisan and well aware of the danger of touching a bare high-tension cable, undoubtedly received a shock which proved fatal. Apparently the deceased had ignored the warning to wear gloves. From the evidence at the inquest it appeared that shutting off the current would have put the town to great inconvenience and it was stated that by exercising great care even high-tension cables could be repaired when "alive." The repairing of low-tension cables was not attended with anything like the same risk. The jury returned a verdict of "Accidental death." Considering the poisonous nature of coal-gas, which is due in a great measure to the carbon monoxide which it contains as well as to certain obscure aromatic bodies, it is remarkable that a greater number of cases of poisoning from this cause are not recorded. At a certain dwelling-house in Woolwich last week it was observed one morning that the blinds remained down and that there were other signs of stillness in the house which implied that something was wrong. On gaining access to the house from the back the police found the rooms pervaded with coal-gas. On reaching the bedrooms the smell of gas was almost overpowering and one person was found dead in bed and two nearly so. There is hope, however, that these two may recover. At the inquest on Jan. 9th on the body of the deceased person it was stated that there was a defect in an old form of chandelier in the room beneath the bedroom. We believe that this old form of extending gas-bracket has been responsible for many a disaster. In this form of chandelier there is a water seal and when the water evaporates the dipping pipe may be above the surface of the water, the arrangement

thus failing as a seal, the gas escaping freely into the apartment. This is a dangerous appliance and should be done away with, especially as modern appliances are now made with special adjustments for extending their length which require no clumsy contrivance for sealing the gas by water. The last case in connexion with the dangers of public services is that in which a firm of chemical manufacturers was summoned at the instance of the West Ham Corporation for discharging dangerous chemical refuse into a sewer. Evidence was given that to this fact a serious explosion could be attributed, the effects of which in the sewers could be seen for nearly half a mile along the line of the sewer, six or seven manholes being blown off, the contents of the sewers at the same time catching fire. A sample of the sewage taken close by the defendants' works ignited readily when a light was applied, the stuff burning for nearly three minutes and throwing up a flame some 18 in. high. The inflammable character of the discharge was probably due to fiery compounds of the nature of benzine. It is quite evident that this unwarrantable procedure might not only be very dangerous but a source also of creating serious defects in a sewer which might have appalling results on the health of a locality. The magistrate was satisfied that the West Ham Corporation had made out their case and the defendants were fined heavily.

TUBERCULOSIS AT RIO DE JANEIRO.

FROM a recently-published lecture by Dr. Moncorvo of Rio de Janeiro it would appear that although of late years the population of that city has largely increased the mortality from tuberculosis has remained pretty nearly stationary. On the whole, the statistics of the disease are said to compare favourably with those issued by the sanitary authorities in Vienna, Berlin, and Paris, but in instituting comparisons of this nature the influence of climate has to be taken into consideration. Sex apparently does not influence the incidence of tuberculosis in Rio de Janeiro, but contrary to a generally-received opinion white children are more liable to suffer than are their dark-skinned congeners. Hereditary phthisis, according to the lecturer, is far from rare; but contagion is likewise a common cause of the disease, especially in the case of nurslings who are given to crawling over floors which have been contaminated by tuberculous sputa and thus run the risk of conveying the germs to their mouths with their fingers. As regards treatment Dr. Moncorvo is a great believer in the virtues of creosote. Having begun with hesitation lest it should not be tolerated, especially during the heat of the summer, he now thinks himself justified in asserting that this medicament is exceedingly well borne by youthful patients and that in it we possess one of the most efficacious of known remedies against tuberculosis.

THE BACTERIOLOGY OF RUM.

IT might be thought impossible on the face of it that there could be any bacteriology of rum seeing that it contains nearly 75 per cent. of alcohol, but according to the results of a very interesting investigation[1] recently made by Mr. V. H. Veley, M.A., F.R.S., of Oxford University, and his wife there does exist an organism in rum which accounts for an apparent disease to which it is liable at times and which is known in the trade as "faultiness." The cause of this disease has long been unexplained, for it has never occurred to those concerned that it could be due to a microbe, especially as the strength of the spirit is only 25 per cent. short of pure alcohol. The "faultiness" of rum is at once obvious when the spirit is diluted with an equal bulk of water, the diluted liquid either immediately or after some hours becoming cloudy and depositing on longer standing a more or less copious precipitate or showing the presence in greater or less abundance of floating flocculencies. The micrococcus which has been isolated and identified as the cause of "faultiness" is a very interesting organism. It does not, however, appear to be pathogenic or toxic according to the results of inoculating a guinea-pig. Its survival in spirit—that is, in a liquid which has hitherto been considered to be one of the best materials for preserving anatomical specimens—is remarkable. Strictly speaking, however, the organism does not flourish in alcohol but "in its gelatinous envelope, thus living as it were in a state of siege in its own castle through the walls of which it can obtain its necessary supplies of food in the form of sugar while keeping out its enemy alcohol." No definite information has been obtained as to the original habitat of this peculiar micro-organism. The discoverers of this new micro-organism which has caused a great pecuniary loss to manufacturers propose to call it provisionally *Coleothrix methystes*, from κολεός (a sheath) and μεθυστής (a drunkard)—a name ingeniously suggested by a Fellow of Corpus Christi College.

[1] "The Micro-organism of Faulty Rum," by V. H. Veley, M.A., F.R.S., and Lilian J. Veley. London: Henry Frowde, Oxford University Press, Amen-corner, E.C. 1898.

MORGAGNI AND THE MEDICAL BROTHERHOOD.

IN scientific medicine Italy was England's "first love." The fact is beautifully illustrated by the Italian historian of the healing art, Francesco Puccinotti. He describes for us the great teacher Acquapendente who having dismissed his class for the day with a peroration of noble Latinity is in the act of receiving William Harvey who has just entered the anatomical theatre with Galileo arm-in-arm. While the two elderly Italians are discussing the new inductive method the young Englishman's eye is arrested by a representation of the semilunar valves which Acquapendente has been demonstrating and the future discoverer of the circulation is all aglow with the "trepida gioia" of a pioneer who has just alighted on an "indication" which converts surmise into conviction. Is there no artist, exclaims Puccinotti, to transfer the epoch-making episode to canvas? Another great Paduan teacher who first disclosed to anatomists the coraco-brachial muscle, Casserio, received the thanks of his British pupils in the immortal elegiacs of the "Caledonian Ovid," Arthur Johnston, whose noble rehabilitation by Sir W. D. Geddes is one of the latest and not the least distinctions of the Aberdeen school. The mighty impulse Italian teaching gave to British medicine in the seventeenth century still survived in the eighteenth when the "Father of Pathology" by his writings, if not by his prælections, inspired the Heberdens, the Hunters, and the Baillies of these islands with some of their most pregnant and prolific ideas. Since then, indeed, the pupil has excelled the master and it is Italy's turn to show her gratitude to the successor on whom her mantle has greatly fallen for the restitution to her, with interest, of the "talents" which she sent forth to develop and to fructify three centuries ago. She is steadfastly loyal to the mighty prophylactic of Jenner and proportionately grateful to its deviser. She places on the façade of the surgical wing of her Roman Policlinico the sculptured presence of the pioneer of antisepsis, Lister. She vies with her continental sisters in eliciting and in illustrating "facts for Darwin," and she wins the prize of our Royal Society by Grassi's brilliant work in that field. *Spirat adhuc amor!* and on Sunday last in one of the greatest and historically most distinguished of her clinical schools, the Ospedale Maggiore of Milan, she unveiled and bade God-speed to its London destination the bust of her own Morgagni, glad to be reminded of what Great Britain owes to her in the

past. All this is as it should be. In the vicissitudes of evolution peoples and schools have each their turn and none can ever claim to have been independent of its precursors or to have said the last word in the inductive sphere. Medicine, of all other arts the most progressive, the most responsive to every impulse or inspiration from that world with which it keeps in ever more intimate touch, relies most on combination, on concerted movement, on unity of "objective." Such is the strategy, such are the tactics, by which it will gain fresh victories in its perennial conflict with disease and premature death. Conspicuous among contemporary interests for the "brotherhood" it equally requires and maintains, it is yearly contracting new alliances and forming new connexions in furtherance of that most "imperial" of all policies—the humanitarian. It is in this light that we welcome every *rapprochement* between our continental brethren and ourselves, all the more when, as in the case of this latest token of Italian reciprocity and goodwill, it comes from a power to which we may yet owe in the future as much as we have owed to it in the unforgotten past.

THE PHARMACEUTICAL SOCIETY AND THE SALE OF POISONS.

THE Pharmaceutical Society of Great Britain held a meeting on Wednesday in Bloomsbury-square for the purpose of discussing new legal regulations with regard to the storage and dispensing of poisons and especially with regard to the prevention of the indiscriminate sale of poisons. Mr. Walter Hills, President of the Pharmaceutical Society, presided. Mr. Robinson, L.C.C., suggested the following resolutions to the members of the society:—

1. That every vessel should be strictly labelled with the particular poison it contained.
2. That poisons in storage should be distinguishable by shape of bottle or package.
3. That in the dispensing and selling of poisons all liniments, embrocations, and lotions containing poisons should be sent out in bottles rendered distinguishable by touch from ordinary medicine bottles, and that there should also be affixed to each such bottle a label giving notice that the contents of the bottle are not to be taken internally, in addition to the name of the article and any particular instructions as to the use.

After considerable discussion the resolutions were carried by a vote of 111 to 5.

THE CHARGE AGAINST DR. REICHARDT.

THE case recently heard at the Surrey Quarter Sessions at Kingston has naturally aroused much interest amongst medical men. The care of patients of weak intellect in private houses always gives rise to no little anxiety and it is often very difficult to say whether such a person should be certified or not, for it "must be fully understood that a person of unsound mind can transact business unless he has been placed under certificates, so that a person, although acknowledged by his friends to be a lunatic, can sign cheques and make a will and squander his property without let or hindrance unless he is made a lunatic by inquisition or unless he is under certificates" (Savage). On the other hand, a medical man who signs a certificate is liable to action on the ground that he negligently and culpably failed duly to inquire into the truth of the facts. A lady named Miss Ethel Hannah Stoeterfoht was placed under the care of Dr. E. N. Reichardt of Ewell and resided in his house. She one day left the house and committed suicide and Dr. Reichardt was indicted on ten counts for "unlawfully receiving and detaining for payment at his residence, Dorset House, Ewell, a lunatic—viz., Ethel Hannah Stoeterfoht—and other lunatics, the said house not having been licensed for the reception of lunatics." The whole trial naturally turned on the question as to whether the patient was or was not a lunatic. The medical evidence was entirely to the effect that the lady was not a person who could have been certified as insane under the Lunacy Act, 1890. The prosecution did not call any medical man to say that she was, and as in such cases medical evidence—especially expert evidence—is rightly considered the means by which such a question should be decided a verdict of "Not guilty" was returned. Dr. Reichardt had done everything he could in the way of treatment for his patient, and although it was afterwards manifested that deliberate preparations for suicide had been made, yet in her general conduct there had been no indications that she was likely to make any attempt upon her life. Great sympathy has been felt for Dr. Reichardt in the position in which he was placed and the verdict has completely exonerated him from any suspicion of professional negligence.

"DOCTOR THERNE."

AT a meeting of the Executive Committee of the Jenner Society held in Gloucester on Dec. 22nd, 1898, the following resolution was passed unanimously:—

"The members of the Executive Committee of the Jenner Society desire to express their appreciation of the recognition of the work of the society by Mr. Rider Haggard in the dedication to its members of his powerful story, 'Doctor Therne.' They also desire to assure Mr. Rider Haggard of their warm sympathy with his just and vigorous protest against the dangerous agitation carried on against vaccination by which many thousands of persons have been misled and have been induced to deprive their children of the only certain protection against a virulent and fatal disease. The committee congratulate Mr. Haggard upon his uncompromising exposure of this evil and trust his book may have a large circulation, as being calculated to lead a considerable section of the public, who cannot be otherwise interested in the subject, to give serious consideration to a matter of urgent and overwhelming importance, affecting, as it does, the health and lives of multitudes of hapless children who may be exposed to the infection of small-pox without the protection afforded by vaccination."

Readers of THE LANCET will remember the high terms of praise in which we were able to refer to Mr. Haggard's romance for its literary vigour and conception as much as for its doctrines.

A CASE OF CHRONIC ONE-SIDED PULMONARY ATELECTASIS.

ON Jan. 4th Mr. E. N. Wood held an inquest upon the body of Charles Lee, aged forty-two years, who had died suddenly on Jan. 1st. Mr. John Mulqueen who was called to see deceased said that upon his arrival he found the patient dead. The cause of death was hæmorrhage. Only one lung had developed. Mr. Mulqueen has kindly sent us the following account of what he found at the post-mortem examination. He says:—

"I made a post-mortem examination on Jan. 3rd and could only find one lung—the right—which was of enormous size extending across the front of the heart and dipping down and fairly well filling the left thoracic cavity. On dissecting the pleura off the back of the left thoracic cavity I came on a small, hard, dark mass which I took to be a rudimentary left lung. At the bifurcation of the trachea the left bronchus was completely obliterated, no air in my opinion ever having entered. There was a cavity at the apex of the right lung of about the size of an egg. The immediate cause of death was hæmoptysis from rupture of a large blood-vessel at the apex."

We fancy that this condition is exceedingly rare. Two cases of congenital absence of one lung were reported by Dr. Wenzel Gruber in Virchow's *Archiv* and referred to in the *British Medical Journal* of Dec. 12th, 1885. Both cases, however, occurred in infants, one of whom was stillborn. The other child had an accessory liver and three accessory spleens. An almost exactly parallel case to that reported by Mr. Mulqueen was commented on in THE LANCET of June 6th, 1885, and communicated by Dr. Glover to the Islington

Medical Society. Here the patient was sixty-three years of age, the absent lung was the right, and was reduced to a substance resembling a sausage. The left lung was correspondingly large and the heart was displaced to the right side.

SALINE SOLUTION IN THE HÆMORRHAGE OF TYPHOID FEVER.

THE value of saline injections in hæmorrhage and collapse from other causes is now well attested, though they are not, perhaps, as widely used as they ought to be. Not many cases of their use in hæmorrhage occurring in typhoid fever have been published. In the *Intercolonial Medical Journal of Australasia* Dr. J. Ramsay has published the following case. A man, aged forty-six years, had severe typhoid fever; the temperature was 104·2° F. and the pulse was 100. He passed 8 oz. of blood and on the following day 10 oz. and a few more ounces with the stool. The temperature fell to 97·6°, the pulse was from 70 to 80, the respiration was sighing, and the skin was clammy. Brandy, strychnine, and digitalis were given without effect. The pulse became weaker and unconsciousness and lividity of the hands and ears supervened. He was practically moribund. Two pints of normal saline solution at 100° were injected into the median cephalic vein. Towards the end of the injection the pulse improved in volume and the general appearance became better. But the effect was only temporary. The patient was livid and lay with half-closed eyes, hiccoughing, vomiting, and passing urine involuntarily. Four hours after the first injection one and a half pints of the solution were injected. Improvement again followed, which was more lasting. After this the fever ran the ordinary course, a relapse of ten days' duration occurred, and he slowly convalesced.

OIL OF EUCALYPTUS, B.P. 1898.

THE increased requirements in regard to the quality of oil of eucalyptus as laid down in the British Pharmacopœia, 1898, have led to the prosecution of a druggist in Islington because though the oil he sold complied with the British Pharmacopœia of 1885 it was not in accordance with the characters and tests now officially demanded in the 1898 edition. Accordingly proceedings were taken under the provisions of the Food and Drugs Act which require that the article sold shall be "of the nature, substance, and quality demanded," &c. The evidence showed that the oil purchased was of the character which the British Pharmacopœia, 1898, evidently intended to exclude. The specific gravity was much lower than 0·910, the official minimum limit, its rotatory power was remote from the standard, it yielded no crystals with phosphoric acid which shows the presence of a due proportion of cineol, while the nitrous acid test showed the presence of phellandrene which is said to give rise to an irritating effect when inhaled. The promptitude and activity of the Islington Vestry in starting so soon a plan of campaign under the fresh requirements of the British Pharmacopœia are conspicuous. A conviction was obtained but we cannot help thinking that the action was a little premature and somewhat hard on the pharmacist. The authorities need not have gone so far as to have actually prosecuted for the sale of a drug which last year was in compliance with the British Pharmacopœia but which is not so now. Surely a warning to the druggist would have had the desired, as well as a salutary, effect and have given him a hint to get rid of his old stock and to replace it with new.

SIR RICHARD DOUGLAS POWELL, M.D., F.R.C.P. Lond., has been appointed Physician-in-Ordinary to the Queen in the room of the late Sir William Jenner; Mr. James Edward Pollock, M.D. King's Coll. Aberd., F.R.C.P. Lond., has been appointed Physician-Extraordinary to the Queen in the room of the late Sir Richard Quain; and Mr. Thomas Barlow, M.D., F.R.C.P. Lond., Physician-in-Ordinary to Her Majesty's Household, has been appointed Physician-Extraordinary in the place of Sir R. Douglas Powell.

MESSRS. LONGMANS, GREEN, AND CO. will shortly reissue in a cheaper form Mr. S. Squire Sprigge's work, "The Life and Times of Thomas Wakley."

DR. J. A. SEWELL, one of the oldest British residents in Mentone, died at Beau Rivage last week.

VACCINATION OFFICERS AND THE NEW ACT.

A MEETING of the members of the Vaccination Officers' Association was held on Jan. 7th at the offices, 4, Bessborough-street, W. Mr. Shattocks (Kensington), the President of the Association, occupied the chair and was supported by a large number of vaccination officers from various metropolitan unions and the home counties. A special committee was appointed to consider what steps should be taken to extend the usefulness of the association which it is intended to convert into a national organisation. In view of the many letters which were read from country officers expressing approval of the efforts which had been made on behalf of the service the chairman urged the absolute necessity of frequent conference among vaccination officers in consequence of the new and important duties cast upon them by the Act of 1898. In the course of general discussion upon the conscience clause of that Act and the extension of the age-period from three to six months the opinion was expressed by most of the officers that these provisions would be prejudicial to securing satisfactory returns in the future, but the belief was expressed generally that as the Government were responsible for the purity of the lymph the bringing of vaccination to the homes of the people would in time be fully appreciated as soon as the alteration was duly appreciated by the public. Aided by the hearty coöperation of the public vaccinator which was held to be indispensable and much to be desired, the members expressed their determination to discharge their new duties as faithfully and efficiently as possible, while it was also held to be a good augury for the future of the new Act that so many busy men in the beginning of a new *régime* should meet together actuated by the sole desire to do their best for the public interest. Some amusing stories were told concerning the "conscientious objector," one officer relating a case in his district where he had received exemption certificates for a number of children and afterwards had received certificates of their successful vaccination—a circumstance which led him to believe that not a few parents were suffering merely from a temporary aberration of conscience.

CHRISTMAS-TIDE AND THE HOSPITALS.

OPINIONS differ as to the wisdom of giving entertainments at institutions specially devoted to the care of the sick, but it is gratifying to see that special care is taken by many of the hospitals to prevent any great inconvenience to those patients whose condition is such that anything but absolute quietness is irritating, if not actually harmful. At St. Mary's Hospital, for instance, special rules were enforced in order "that no one very ill shall be tortured by the noisy enjoyment of those well enough to engage in it." Nevertheless Christmas time is essentially one of "brotherly love" and also one when all Christian peoples endeavour to make their neighbours happy. Especially is this so with regard to the poor and suffering and as long as Father Christmas is venerated efforts of some kind will always be made to

cheer the lives of those who through sickness are separated from their friends during the celebration of this festival. We append below brief notes which we have received from the various hospitals.

On account of the death of Baron Ferdinand de Rothschild, the founder, there were no festivities at Evelina Hospital.

East London Hospital for Children and Dispensary for Women.—The entertainment here provided took the form of a Punch and Judy show, Christmas tree, &c., in addition to which there was a band comprised of several members of the Royal Horse Guards.

Royal Free Hospital.—The Christmas festivities began on Dec. 15th with the students' entertainment, which consisted of the well-known one-act operetta, *Our Joys*, and *Mrs. Jarley's Modern Waxworks*, and some comic songs. This was given in two wards and again the following evening in two more. On the 19th and 20th carols were sung in all the wards to the accompaniment of stringed instruments and by the light of Chinese lanterns. These were followed by the distribution of the usual Christmas gifts of clothing, sweets, and toys. Christmas day was celebrated on Boxing day by the sisters' teas to old patients and friends in the wards, which were very prettily decorated. On the following day the entertainment of the resident medical officers took place in four wards. Mr. Williams gave a magic-lantern exhibition, Mr. Wyndham Jones ("Captain Spider"), an old patient, and the "Fly" sang comic songs to the banjo and fiddle, Mr. Crispin showed a phonograph, a conjuror performed in two wards, and Mr. Tunnicliff sang comic songs. On Dec. 28th and 29th concerts were given by the sisters in the Milne and Rhodes wards, followed by refreshments to the patients and their friends.

German Hospital, Dalston.—The Christmas festivities took place on Saturday evening, Dec. 24th, and consisted of carol singing in the wards, a distribution of useful presents to the patients, besides toys and picture-books to the children.

St. George's Hospital.—On Christmas day all the patients who were able to partake of them had roast beef, plum-pudding, &c. On Dec. 28th a Christmas tea was provided in every ward for the patients, when each patient received a gift. On Jan. 5th the usual entertainment for the patients was held in the board-room, when Devant's animated photographs were exhibited, with music, &c. On Jan. 9th and 10th the annual entertainments for the nursing staff took place, when a programme of music, recitations, &c., was arranged.

Royal Hospital for Children and Women.—Santa Claus paid his annual visit to the wards on Christmas Eve and the children found his gifts when they awoke on Christmas morning. Turkeys and the usual Christmas fare were partaken of by all fit to do so, and for the others suitable good things were provided. On Dec. 27th there was a Christmas tree, Punch and Judy, and other juvenile delights, and each patient invited one or two guests.

St. Mary's Hospital.—On Christmas day turkeys were provided for dinner and in the afternoon and evening the nurses, medical officers, and other friends entertained the patients. A case of toys was sent by request of H.R.H. the Duchess of York from Kew children and other friends. A large case of toys was received from *Home Chat* Christmas tree and a large parcel of toys, crackers, &c., was received from *Truth*. Two cases of Persian dates were received from Mr. J. B. Gray, toys and dolls were received from Mrs. Ellis, toys from Mrs. Enoch, warm underclothing from Lady Surtees, 6 large turkeys from Mr. John Aird, M.P., a box of clothing from Miss Henderson, 10 pheasants from Viscount Portman, toys from Miss Dundas Graham; books, cards, &c., from the Religious Tract Society, socks and stockings from Miss Eleanor Barton, toys and books from *Little Folks*, and warm clothing from the Hon. Miss M. Mostyn. Each patient in the hospital received a present of clothing and a Christmas letter on Christmas morning, and every man, health permitting, received also 1 oz. of tobacco and a pipe and was allowed to smoke in the hospital. On Dec. 28th a Christmas tree for the children was held in the board-room. Before the distribution of toys there was a Punch and Judy show and after it an entertainment consisting of thought-reading and ventriloquism.

London Hospital.—Early on Christmas morning a number of sisters, nurses, and probationers assembled in the nursing home and then walked round all the wards in the hospital singing carols, a proceeding which the nurses enjoyed and which pleased the patients very much. Later in the morning Father Christmas and his attendants visited each ward and distributed a present to every patient, each sister having the interesting little packets in readiness for Father Christmas. Christmas cards and letters were distributed by the night sisters early in the morning and the wards presented a bright appearance with each patient's new possessions spread out with pride and satisfaction on the bed. Christmas fare in the shape of roast beef and plum-pudding was provided by the hospital for all those well enough to partake of it. Some fortunate wards had gifts of turkeys sent to them. In many cases great delight was given to the patients by the fact that their own medical attendant helped to serve the pudding on this festive occasion. Later in the afternoon the Christmas tea took place in each ward. These teas were followed by a series of well-organised entertainments got up by the medical officers and students who worked indefatigably on Christmas day to give the patients a happy time. Christy minstrels, Pierrots, farces, comic songs in character, well adapted to the taste of the audience, were given in every ward, the programme being carefully worked out so that the enjoyment never flagged until the cheerful evening was brought to a close at 8 P.M. Many friends of the medical officers and nurses also visited the hospital and gave songs and recitations. Smoking was allowed in the men's wards during the whole of Christmas day and the men looked forward to this privilege with great satisfaction from the time they realised that they were destined to spend their Christmas day in the hospital. The tobacco for this festive occasion was kindly provided by the medical officers.

Middlesex Hospital.—By the energy of the lady superintendent and her friends the patients, nurses, and servants were again each presented with a gift on Christmas morning. The serious nature of the illness of most of the patients prevented any dramatic function or concert being held in the wards, but in order to make Christmas as cheerful as possible each of the wards was tastefully decorated and a special Christmas dinner, consisting of turkeys or geese and the usual Christmas pudding, was provided for those well enough to partake of it. In the afternoon the patients were allowed to see their visitors and had a special tea provided. There was a Christmas tree in the board-room loaded with many beautiful gifts, from which each of the patients had something. A special feature, however, was the two Christmas trees in the children's wards. These trees were unloaded on New Year's day when the children had a tea-party. It should be remembered that although there were no actual entertainments at the hospital proper the hospital has a convalescent home of its own at Clacton-on-Sea. It is here that the patients as soon as they are well enough are sent and in this home the Christmas entertainment is of a more elaborate character—in fact, the patients there in the winter have one long holiday. There is a stage in the dining-hall in which sometimes as often as twice a week a dramatic performance is given or a concert is held.

North-Eastern Hospital for Children.—The little patients who had been thinking for many days of nothing but Christmas and the delights which they had learnt from tradition were always associated with that time at a children's hospital found that the fun and enjoyment of the festivities which were celebrated on Bank Holiday far exceeded their highest conceptions. Carol singing commenced the day and was followed by the distribution of toys, cards, and sweets, of which, through the kindness of many friends of the hospital, there were enough for every child. The Christmas dinner was served at midday and the afternoon and evening were spent in the enjoyment of Punch and Judy, a magic lantern entertainment, and in all kinds of Christmas games. The festivities were continued on Tuesday with little diminution. The committee provided the dinner and the nursing staff and resident medical officers were responsible for the tasteful decorations. Christmas trees were provided, decorated, and hung with toys, &c., in time for the annual Christmas-tree party, which took place on Jan. 11th. Sunday is the usual visiting day and each mother who visited her child on Christmas Day received a present of two articles of clothing for the little ones at home.

Royal Orthopædic Hospital.—Christmas day falling this year on Sunday the usual treat to the patients was given on Boxing day. All the wards were tastefully

decorated, special attention having been given to the Victoria Ward where the entertainment was held. At 5 o'clock all sat down to high tea, after which the nurses performed a one-act comedy appropriately named *Five o'clock Tea*. This was followed by a distribution from the lucky tub by Dr. Laming Evans, the house surgeon, who handed a present to every inmate. Afterwards came songs, recitations, charades, and various games, the programme concluding (at about 9.30 P.M.) by all singing "Auld Lang Syne" and "God Save the Queen." The funds for the entertainment were contributed by the committee, the surgeons, and many of the governors of the hospital, besides which two young friends generously sent some toys for the children, and the editor of *Truth* sent the usual present of dolls, &c., from his annual exhibition.

Paddington-green Children's Hospital.—At Christmas a life-size figure of Santa Claus covered with toys of various kinds was presented by Mr. Thomas Gibbs, and Christmas trees were presented by other friends of the hospital and turkeys for the Christmas dinner at both the hospital and convalescent home by Mr. John Aird, M.P. On Christmas morning each patient received a parcel of clothing, toys, and cards. The stockings which had been hung upon the cots overnight were also filled with small toys kindly given by friends. The parents visited the children on Christmas afternoon, some remaining to the service afterwards which was conducted by the Rev. A. Scott. *Truth* sent, as usual, a number of toys, games, &c., including a large beautifully dressed doll representing "Summer." The Christmas entertainments were given on Thursday, Jan. 5th, when Mr. Friend again kindly provided and exhibited a lantern display and another gentleman showed some conjuring tricks, &c. At the convalescent home the parents visited the children on Christmas day and took tea with them. A Christmas tree was given by a lady friend. In the early part of the new year a graphophone will be exhibited to the children. The Home is at Harrow and provides 12 beds.

Samaritan Free Hospital for Women and Children.—On Dec. 26th the patients and nurses had their Christmas dinner of turkey and plum-pudding. On the afternoon of Dec. 27th each patient had a friend to tea, after which a concert was given by ladies and gentlemen interested in the hospital. The proceedings closed with a presentation of suitable gifts to the patients, nurses, and servants.

St. Thomas's Hospital.—At this hospital Christmas was kept on Dec. 26th, the patients being provided with roast ribs of beef and plum-pudding. Those who were able were allowed to smoke. Each patient was permitted to have a friend to tea and in the evening music and entertainment passed the time away all too quickly. A Christmas tree was provided for the children on the last day of the old year.

University College Hospital.—The Christmas treat to the patients was held on Thursday evening, Dec. 29th. Efforts were made to make the proceedings a great success as this entertainment was probably the last of its kind in the old hospital and these efforts were amply rewarded. There was a most liberal response to the appeal made by the All Saints Sisterhood for funds to provide the treat and nurses and students gave much help in the same direction and made special preparations for the amusement of the patients. The proceedings commenced with a concert in which Mr. Arthur Roberts, Mr. Harry Davenport, and members of the staff took part, and at the conclusion there was a theatrical performance. A concert was given by Mrs. Walter Scott and her friends and a Christmas tree was also provided.

Westminster Hospital.—Christmas day for secular festivities was celebrated at this hospital on Dec. 26th, the day beginning with the distribution of useful presents to the patients in each ward. The dinner consisted of turkeys, capons, roast beef, and plum-pudding, and was served at midday. In the afternoon visiting was allowed and those men who were able to get to the convalescent ward were permitted to smoke. A large Christmas tree, the gift of Lord Knutsford, was set up in the children's ward, and this was unloaded in the afternoon by Dr. de Havilland Hall and his family and Mr. Thomas Bond, the senior surgeon. A series of entertainments organised by Mr. Frank Bond, one of the students, was given in the wards during the afternoon. The sisters and nurses who during the whole day had devoted themselves assiduously to the entertainment of the patients dined together in the board-room at 7.30 P.M.

PUBLIC VACCINATORS AT CHESTERFIELD.

AT the end of last year the Chesterfield Board of Guardians sent an intimation to their public vaccinators that they, the Board, were only going to allow the minimum fees laid down by the Local Government Board. The 16 medical men affected thereupon held a meeting and informed the guardians that they could not accept these terms. The guardians appointed a committee to meet the public vaccinators and see what could be done. This meeting was held on Jan. 4th, 3 guardians being present of their committee, one of whom was Mr. W. B. Robinson, jun., 9 of the 16 public vaccinators attended.

According to the account given in the *Derbyshire Times* of Jan. 7th Mr. Robinson interrupted the arguments of Dr. Court who led the medical deputation with the words "bunkum," "all rot," and finally Mr. Robinson announced that if they did not accept the minimum fee they could take twenty-eight days' notice and go. Whereupon the medical men present left in a body and the matter now rests with the Local Government Board. To slightly alter a well-known poem:

> "W. B.
> Robinson he
> Doesn't know everything down in Judee."

The guardians have a right to terminate the contract with their public vaccinators at twenty-eight days' notice, but with regard to the fees the matter had by Jan. 4th passed out of the guardians' hands, for the Vaccination Order distinctly states (Art. 5, sec. 2) that if the amount of payment be not agreed upon by the guardians and the medical officer before the First day of January, 1899, the amount shall be determined by the Local Government Board.

And we fancy that Mr. W. B. Robinson will find that the Local Government Board will not agree with him.

VITAL STATISTICS.

HEALTH OF ENGLISH TOWNS.

IN thirty-three of the largest English towns 7230 births and 4174 deaths were registered during the week ending Jan. 7th. The annual rate of mortality in these towns, which had increased in the three preceding weeks from 16·6 to 19·1 per 1000, was last week again 19·1. In London the rate was 19·1 per 1000, and corresponded with the mean rate in the thirty-two provincial towns. The lowest rates in these towns were 12·6 in Cardiff, 12·7 in Gateshead, 14·6 in Huddersfield, and 14·7 in Derby; the highest rates were 22·6 in Swansea and in Newcastle-upon-Tyne, 23·5 in Preston, 23·8 in Liverpool, and 27·7 in Halifax. The 4174 deaths included 367 which were referred to the principal zymotic diseases, against 424 and 405 in the two preceding weeks; of these 96 resulted from diphtheria, 84 from measles, 80 from whooping-cough, 47 from "fever" (principally enteric), 30 from scarlet fever, and 30 from diarrhœa. The lowest death-rates from these diseases were recorded in Plymouth, Burnley, Bradford, and Newcastle-upon-Tyne, and the highest rates in West Ham, Swansea, Nottingham, and Salford. The greatest mortality from measles occurred in West Ham, Bolton, Salford, Manchester, and Nottingham; and from whooping-cough in Halifax. The mortality from scarlet fever and from "fever" showed no marked excess in any of the large towns. The 96 deaths from diphtheria included 30 in London, 11 in Swansea, 10 in Leeds, 9 in Liverpool, 6 in Sheffield, 5 in West Ham, 4 in Manchester, and 3 in Portsmouth. No fatal case of small-pox was registered during the week under notice either in London or in any other of the thirty-three large towns, and one small-pox patient was under treatment in the Metropolitan Asylums Hospitals on Saturday last, Jan. 7th. The number of scarlet fever patients in these hospitals and in the London Fever Hospital on the same date was 2912, against 3043, 2901, and 2939 at the end of the three preceding weeks; 291 new cases were admitted during the week, against 260, 221, and 276 in the three preceding weeks. The deaths referred to diseases of the respiratory organs in London, which had been 284 and 306

in the two preceding weeks, further rose to 365 last week, but were 311 below the corrected average. The causes of 63, or 1·5 per cent., of the deaths in the thirty-three towns were not certified, either by a registered medical practitioner or by a coroner. All the causes of death were duly certified in Croydon, Derby, Bolton, Oldham, and in three other smaller towns; the largest proportions of uncertified deaths were registered in Leicester, Liverpool, Bradford, and Sheffield.

HEALTH OF SCOTCH TOWNS.

The annual rate of mortality in the eight Scotch towns, which had been 18·2 per 1000 in each of the two preceding weeks, rose again to 21·3 during the week ending Jan. 7th, and exceeded by 2·1 per 1000 the mean rate during the same period in the thirty-three large English towns. The rates in the eight Scotch towns ranged from 18·3 in Paisley and 19·5 in Leith to 23·7 in Perth and 25·0 in Edinburgh. The 651 deaths in these towns included 22 which were referred to diarrhœa, 20 to whooping-cough, 13 to scarlet fever, 9 to measles, 9 to diphtheria, and 5 to "fever." In all, 78 deaths resulted from these principal zymotic diseases, against 68 and 58 in the two preceding weeks. These 78 deaths were equal to an annual rate of 2·6 per 1000, which was 0·9 above the mean rate last week from the same diseases in the thirty-three large English towns. The fatal cases of whooping-cough, which had been 14 in each of the two preceding weeks, rose to 20 last week, of which 13 occurred in Glasgow and 3 in Edinburgh. The 13 deaths from scarlet fever exceeded by 3 the number in the preceding week, and included 7 in Glasgow and 3 in Dundee. The fatal cases of diphtheria, which had declined from 6 to 3 in the three preceding weeks, rose again to 9 last week, of which 3 occurred in Glasgow, 3 in Edinburgh, and 2 in Dundee. The 9 deaths from measles showed a decline of 4 from the number in the preceding week, and included 3 in Glasgow and 3 in Aberdeen. Of the 5 deaths referred to different forms of "fever" 3 occurred in Glasgow and 2 in Aberdeen. The deaths from diseases of the respiratory organs in these towns, which had been 119 and 110 in the two preceding weeks, rose again to 123 last week, but were 54 below the number in the corresponding period of last year. The causes of 28, or more than 4 per cent., of the deaths in these eight towns last week were not certified.

HEALTH OF DUBLIN.

The death-rate in Dublin, which had been 25·2 and 27·7 per 1000 in the two preceding weeks, declined again to 26·7 during the week ending Jan. 7th. During the thirteen weeks of last quarter the rate of mortality in the city averaged 26·8 per 1000, the rate during the same period being 17·2 in London and 20·0 in Edinburgh. The 179 deaths registered in Dublin during the week under notice showed a decline of 7 from the number in the preceding week, and included 13 which were referred to the principal zymotic diseases, against numbers declining from 15 to 9 in the three preceding weeks; of these, 6 resulted from whooping-cough, 4 from "fever," 2 from diarrhœa, and 1 from diphtheria, but not one from either small-pox, measles, or scarlet fever. These 13 deaths were equal to an annual rate of 1·9 per 1000, the zymotic death-rate during the same period being 1·6 in London and 1·7 in Edinburgh. The fatal cases of whooping-cough, which had been 4 in each of the two preceding weeks, rose to 6 last week. The 4 deaths referred to different forms of "fever" showed an increase upon those registered in recent weeks. The mortality from diphtheria corresponded with that recorded in the preceding week. The 179 deaths in Dublin last week included 29 of infants under one year of age and 38 of persons aged upwards of sixty years; the deaths both of infants and of elderly persons showed a decline from those recorded in the preceding week. Eight inquest cases and 6 deaths from violence were registered; and 57, or nearly a third, of the deaths occurred in public institutions. The causes of 11, or more than 6 per cent., of the deaths in the city last week were not certified.

VITAL STATISTICS OF LONDON DURING DECEMBER, 1898.

IN the accompanying table will be found summarised complete statistics relating to sickness and mortality during December in each of the forty-three sanitary areas of London. With regard to the notified cases of infectious diseases in the metropolis, it appears that the number of persons reported to be suffering from one or other of the nine diseases specified in the table was equal to 9·5 per 1000 of the population, estimated at 4,504,766 persons in the middle of 1898. In the three preceding months the rates had been 8·9, 11·5, and 10·8 per 1000 respectively. No case of any of these diseases was notified last month in St. Martin-in-the-Fields; in the other sanitary areas the rates were considerably below the average in St. George Hanover-square, Westminster, St. James Westminster, St. Giles, City of London, and St. Olave Southwark, while they showed the largest excess in Fulham, St. Saviour Southwark, Battersea, Wandsworth, Woolwich, and Plumstead. Only 2 cases of small-pox were notified in London during December (1 in Lambeth and 1 in Battersea), and no small-pox patients were under treatment last month in any of the Metropolitan Asylums Hospitals. The prevalence of scarlet fever in London showed a further decline from that recorded in the two preceding months; among the various sanitary areas this disease showed the highest proportional prevalence in Fulham, Rotherhithe, Wandsworth, Greenwich, Woolwich, Lee, and Plumstead. The Metropolitan Asylums Hospitals contained 2883 scarlet fever patients at the end of December, against 2425, 2977, and 3090 at the end of the three preceding months; the weekly admissions averaged 239, against 270, 350, and 288 in the three preceding months. The prevalence of diphtheria in London during December showed a slight further decline from that recorded in recent months; this disease was proportionally most prevalent in Hackney, Limehouse, St. Saviour Southwark, St. George Southwark, Newington, Bermondsey, Battersea, and Lewisham sanitary areas. There were 1239 diphtheria patients under treatment in the Metropolitan Asylums Hospitals at the end of December, against 1024, 1182, and 1269 at the end of the three preceding months; the weekly admissions averaged 173, against 172 in each of the two preceding months. The prevalence of enteric fever in London showed a marked decline from that recorded in the preceding month; among the various sanitary areas this disease showed the highest proportional prevalence in St. George Hanover-square, Westminster, St. Pancras, Clerkenwell, and St. George Southwark. The Metropolitan Asylums Hospitals contained 255 enteric fever patients at the end of December, against 155, 223, and 286 at the end of the three preceding months; the weekly admissions averaged 36, against 28, 41, and 45 in the three preceding months. Erysipelas was proportionally most prevalent in Bethnal Green, Whitechapel, St. George-in-the-East, Rotherhithe, and Wandsworth sanitary areas. The 20 cases of puerperal fever notified in London during December included 5 in Mile End Old Town, 2 in Fulham, 2 in Islington, and 2 in Lambeth sanitary areas.

The mortality statistics in the table relate to the deaths of persons actually belonging to the various sanitary areas of the metropolis, the deaths occurring in the institutions of London having been distributed among the various sanitary areas in which the patients had previously resided. During the four weeks ending Saturday, Dec. 31st, the deaths of 5773 persons belonging to London were registered, equal to an annual rate of 16·9 per 1000, against 21·0, 17·3, and 16·3 in the three preceding months. The lowest death-rates in the various sanitary areas were 10·4 in St. George Hanover-square, 11·5 in St. James Westminster and in Stoke Newington, 12·1 in Hampstead, 12·5 in Westminster, 13·4 in Kensington, and 14·2 in Lewisham (excluding Penge); the highest rates were 22·0 in Limehouse, 22·1 in St. Luke, 22·2 in Holborn, 23·1 in St. George Southwark, 24·0 in Newington, and 28·2 in St. Saviour Southwark. During the four weeks of December 570 deaths were referred to the principal zymotic diseases in London; of these, 107 resulted from measles, 42 from scarlet fever, 174 from diphtheria, 101 from whooping-cough, 1 from typhus fever, 79 from enteric fever, 1 from an ill-defined form of enteric fever, and 65 from diarrhœa. These 570 deaths were equal to an annual rate of 1·7 per 1000, against 1·5 in the preceding month. No death from any of these zymotic diseases was recorded last month in St. Martin-in-the-Fields; in the other sanitary areas they caused the lowest death-rates in St. George Hanover-square, Westminster, Stoke Newington, Holborn, and St. Luke; and the highest rates in Whitechapel, Limehouse, Mile End Old Town, St. Saviour Southwark, St. George Southwark, and Newington. The 107 fatal cases of measles were as

ANALYSIS OF SICKNESS AND MORTALITY STATISTICS IN LONDON DURING DECEMBER, 1898.

(Specially compiled for THE LANCET.)

SANITARY AREAS	Estimated population in the middle of 1898.	NOTIFIED CASES OF INFECTIOUS DISEASE.											DEATHS FROM PRINCIPAL INFECTIOUS DISEASES.											Deaths from all causes.	Death-rate per 1000 living.	Deaths of infants under one year to 1000 births.
		Small-pox.	Scarlet fever.	Diphtheria.*	Typhus fever.	Enteric fever.	Other continued fevers.	Puerperal fever.	Erysipelas.	Cholera.	Total.	Annual rate per 1000 persons living.	Small-pox.	Measles.	Scarlet fever.	Diphtheria.†	Whooping-cough.	Typhus fever.	Enteric fever.	Other continued fevers.	Diarrhœa.	Total.	Annual rate per 1000 persons living.			
LONDON	4,504,766	2	1290	1065	1	398	4	20	477	--	3257	9·5	—	107	42	174	101	1	79	1	65	570	1·7	5773	16·9	122
West Districts.																										
Paddington	127,480	—	12	43	—	9	—	—	11	—	75	7·8	—	—	1	7	5	—	2	—	—	15	1·5	151	15·6	121
Kensington	172,174	—	34	9	—	13	1	—	23	—	80	6·1	—	—	1	1	2	—	5	—	2	11	0·8	176	13·4	118
Hammersmith	107,370	—	35	4	—	4	—	—	10	—	53	6·5	—	—	4	1	1	—	2	—	2	10	1·2	132	16·2	142
Fulham	125,275	—	65	29	—	11	—	2	15	—	122	13·2	—	1	2	5	2	—	4	—	2	16	1·7	136	14·8	125
Chelsea	96,713	—	16	15	—	8	—	1	8	—	48	6·5	—	—	1	—	2	—	2	—	—	5	0·7	108	14·6	162
St. George Hanover-square	80,608	—	9	11	—	11	—	—	6	—	37	6·0	—	—	—	1	—	—	2	—	1	4	0·6	64	10·4	34
Westminster	52,574	—	3	5	—	7	—	—	1	—	16	3·9	—	—	1	—	—	—	—	—	—	1	0·2	51	12·5	41
St. James Westminster	22,200	—	1	2	—	—	—	—	4	—	7	4·0	—	1	—	1	—	—	—	—	—	2	1·1	20	11·5	91
North Districts.																										
Marylebone	140,483	—	27	20	—	14	—	—	19	—	80	7·4	—	—	1	5	1	—	5	—	1	13	1·2	175	16·2	106
Hampstead	78,755	—	14	16	—	4	—	—	4	—	38	6·4	—	—	—	3	—	—	3	—	—	6	1·0	72	12·1	129
St. Pancras	243,416	—	80	49	—	35	—	—	31	—	195	10·5	—	10	6	15	9	—	4	—	7	51	2·7	361	19·4	149
Islington	344,616	—	104	41	1	27	—	2	23	—	198	7·6	—	2	2	4	13	1	6	—	3	31	1·2	405	15·5	104
Stoke Newington	34,660	—	16	9	—	3	—	—	1	—	29	11·1	—	—	—	—	—	—	1	—	—	1	0·4	30	11·5	86
Hackney	219,630	—	68	73	—	24	1	1	21	—	188	11·3	—	9	3	6	4	—	2	—	3	27	1·6	253	15·2	107
Central Districts.																										
St. Giles	37,519	—	6	1	—	1	—	—	2	—	10	3·4	—	—	1	—	—	—	—	—	1	2	0·7	49	16·9	99
St. Martin-in-the-Fields	12,424	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	17	17·4	125
Strand	23,284	—	3	7	—	2	—	—	—	—	12	6·6	—	—	—	—	—	—	1	—	1	2	1·1	38	21·0	126
Holborn	30,056	—	7	4	—	1	—	—	3	—	15	6·4	—	—	—	—	—	—	1	—	—	1	0·4	52	22·2	155
Clerkenwell	66,120	—	21	19	—	10	—	—	6	—	56	11·0	—	4	—	2	—	—	—	—	1	7	1·4	96	18·9	126
St. Luke	41,076	—	8	12	—	1	—	—	6	—	27	8·5	—	1	—	1	—	—	—	—	—	2	0·6	70	22·1	90
City of London	29,088	—	4	1	—	3	—	—	1	—	9	3·9	—	—	—	1	—	—	—	1	—	2	0·9	34	14·7	133
East Districts.																										
Shoreditch	121,435	—	24	23	—	6	—	1	12	—	66	7·1	—	9	2	3	2	—	3	—	—	19	2·0	181	19·4	123
Bethnal Green	129,027	—	25	36	—	15	—	1	39	—	114	11·5	—	12	1	7	—	—	2	—	2	24	2·4	208	21·0	108
Whitechapel	80,559	—	25	18	—	1	—	1	13	—	58	9·5	—	7	—	4	3	—	—	—	4	18	2·9	120	19·6	137
St. George-in-the-East	48,241	—	15	8	—	6	—	—	12	—	41	11·2	—	—	—	1	1	—	—	—	1	3	0·8	73	19·9	142
Limehouse	58,661	—	3	17	—	3	—	—	6	—	29	6·5	—	7	—	5	2	—	—	—	1	15	3·3	99	22·0	139
Mile End Old Town	112,528	—	26	28	—	8	—	5	16	—	83	9·7	—	14	—	7	—	—	3	—	2	26	3·0	170	19·8	127
Poplar	170,220	—	18	32	—	21	—	1	22	—	94	7·2	—	6	1	4	3	—	4	—	3	21	1·6	226	18·1	159
South Districts.																										
St. Saviour Southwark	24,562	—	6	13	—	3	—	—	2	—	24	12·6	—	3	—	2	4	—	1	—	—	10	5·2	54	28·2	118
St. George Southwark	60,466	—	10	32	—	7	—	—	5	—	54	11·7	—	5	1	5	3	—	4	—	—	18	3·9	107	23·1	157
Newington	123,183	—	33	51	—	8	—	1	18	—	111	11·8	—	7	1	12	9	—	—	—	3	32	3·4	225	24·0	201
St. Olave Southwark	11,288	—	3	—	—	1	—	—	—	—	4	4·5	—	—	—	—	—	—	1	—	—	1	1·1	15	17·0	77
Bermondsey	85,738	—	29	32	—	6	—	1	9	—	77	11·7	—	3	—	8	—	—	—	—	—	11	1·7	140	21·3	159
Rotherhithe	40,849	—	19	2	—	5	—	—	9	—	35	11·2	—	—	1	—	3	—	—	—	1	5	1·6	56	18·0	88
Lambeth	304,073	1	76	107	—	21	1	2	27	—	235	10·2	—	1	8	17	6	—	5	—	7	44	1·9	387	16·8	114
Battersea	171,921	1	44	89	—	20	—	—	16	—	170	13·1	—	1	2	17	5	—	4	—	1	30	2·3	203	15·7	106
Wandsworth	202,526	—	94	45	—	25	—	1	31	—	196	13·1	—	1	1	6	6	—	3	—	4	21	1·4	223	14·9	132
Camberwell	261,189	—	85	72	—	24	1	—	22	—	204	10·3	—	3	—	8	9	—	2	—	2	24	1·2	303	15·3	133
Greenwich	180,441	—	83	30	—	17	—	—	11	—	141	10·3	—	—	—	7	3	—	4	—	6	20	1·5	210	15·3	74
Lewisham (excluding Penge)	88,562	—	16	31	—	7	—	—	4	—	58	8·8	—	—	—	3	2	—	3	—	—	8	1·2	94	14·2	87
Woolwich	41,478	—	33	10	—	2	—	—	3	—	48	15·1	—	—	—	2	1	—	—	—	2	5	1·6	50	15·7	90
Lee	39,717	—	17	14	—	3	—	—	—	—	34	11·3	—	—	—	2	—	—	—	—	—	2	0·7	55	18·3	152
Plumstead	62,531	—	73	5	—	3	—	—	5	—	86	18·4	—	—	1	1	—	—	—	—	2	4	0·9	74	15·8	163
Port of London	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

* Including 21 cases of membranous croup.

† Including deaths from membranous croup.

many as 201 below the corrected average number in the corresponding periods of the ten preceding years; this disease showed the highest proportional fatality in Shoreditch, Bethnal Green, Whitechapel, Limehouse, Mile End Old Town, and St. George Southwark sanitary areas. The 42 deaths referred to scarlet fever were about half the corrected average number; among the various sanitary areas this disease was proportionally most fatal in Hammersmith and Lambeth. The 174 fatal cases of diphtheria were 32 below the corrected average number; this disease showed the highest proportional fatality in St. Pancras, Limehouse, Mile End Old Town, St. Saviour Southwark, St. George Southwark, Newington, Bermondsey, and Battersea sanitary areas. The 101 deaths from whooping-cough were 80 below the corrected average number; among the various sanitary areas this disease was proportionally most fatal in St. Saviour Southwark, St. George Southwark, Newington, and Rotherhithe. The fatal case of typhus fever belonged to Islington sanitary area. The 79 deaths referred to enteric fever were 14 above the corrected average number; this disease showed the highest proportional fatality in Fulham, Marylebone, Hampstead, St. George Southwark, and Lewisham sanitary areas. The 65 fatal cases of diarrhœa slightly exceeded the average. In conclusion, it may be stated that the aggregate mortality in London last month from these principal zymotic diseases was more than 36 per cent. below the average.

Infant mortality in London during December, measured by the proportion of deaths of children under one year of age to registered births, was equal to 122 per 1000, and was considerably below the average. Among the various sanitary areas the lowest rates of infant mortality were recorded in St. George Hanover-square, Westminster, Stoke Newington, St. Olave Southwark, Lewisham, and Greenwich; and the highest rates in Chelsea, Holborn, Poplar, St. George Southwark, Newington, Bermondsey, and Lee.

THE SERVICES.

ROYAL NAVY MEDICAL SERVICE.

FLEET SURGEON VALENTINE DUKE is placed on the retired list with the rank of Deputy Inspector-General of Hospitals and Fleets.

The following appointments are notified:—Fleet Surgeons: A. W. Russell to the *Pembroke*, for Chatham Dockyard; J. L. Sweetnam to the *Pembroke*, temporary; A. McKinlay to the *Howe;* and A. H. Miller to the *Resolution.* Staff Surgeons: J. C. F. Whicher to the *Melampus;* F. J. Burns to the *Pactolus;* W. Eames to the *Theseus;* W. S. Lightfoot to Plymouth Hospital; J. Barry to the *Pegasus;* G. H. Foott to the *Pelorus;* and H. W. Macnamara to the *Boscawen.* Surgeon J. Martin to the *Theseus.*

ARMY MEDICAL SERVICE.

Surgeon-General W. Taylor, to be Deputy Director-General. Lieutenant-Colonel W. L. Gubbins, Royal Army Medical Corps, to be Assistant Director. The under-mentioned officers of the Royal Army Medical Corps to be Deputy Assistant Directors:—Major W. G. A. Bedford and Major W. G. Macpherson.

ROYAL ARMY MEDICAL CORPS.

Major E. H. Myles is posted to the Punjaub, Major G. F. Gubbin to Bengal, and Majors R. H. Forman and F. J. W. Stoney to Madras. Captain Rawnsley embarks for Bombay, Captain R. J. Copeland joins at Woolwich, and Lieutenant G. S. Nickerson embarks for Egypt. Major H. G. Hathaway is directed to join at Woolwich.

Captain Alexander J. Chambers is placed on temporary half-pay on account of ill-health.

ARMY MEDICAL RESERVE OF OFFICERS.

Surgeon-Captain M. Mackenzie to be Surgeon-Major; Surgeon-Captain Robert Mitchell, 1st Volunteer Battalion the Lancashire Fusiliers, to be Surgeon-Captain.

VOLUNTEER CORPS.

Artillery: 4th Durham (Western Division, Royal Artillery): Surgeon-Lieutenant-Colonel S. Gourley resigns his commission; also is permitted to retain his rank and to continue to wear the uniform of the corps on his retirement. *Rifle:* 1st Volunteer Battalion the Buffs (East Kent) Regiment: Arthur Ernest Larking to be Surgeon-Lieutenant. 1st Herefordshire: James McKean to be Surgeon-Lieutenant. 2nd Volunteer Battalion the Duke of Cambridge's Own (Middlesex Regiment): Second Lieutenant A. D. Howard to be Lieutenant; Surgeon-Captain H. G. G. Wilkins resigns his commission.

THE VOLUNTEER AMBULANCE SCHOOL OF INSTRUCTION.

The following officers who have been under instruction from the staff of the school have recently passed the proficiency examination conducted by the officers of the Royal Army Medical Corps at the headquarters of regimental districts—viz.: Surgeon-Major C. Godson, Army Medical Reserve of Officers; Surgeon-Captain A. Abraham, 5th Volunteer Battalion Durham Light Infantry; Surgeon-Lieutenant J. W. Edwards, Tees Volunteer Division Submarine Miners, Royal Engineers; Surgeon-Lieutenant J. F. Fotheringham, Queen's Own Rifles of Canada; Surgeon-Lieutenant D. G. Newton, 1st Volunteer Battalion York and Lancaster Regiment; Surgeon-Lieutenant J. F. Hall, 3rd Volunteer Battalion "The Queen's" Royal West Surrey Regiment; Surgeon-Lieutenant J. F. McCann, 1st Middlesex (Victoria and St. George's) Rifle Volunteers; Surgeon-Lieutenant J. E. Bates, Bearer Company, Surrey Volunteer Brigade; Surgeon-Lieutenant J. Allison, 1st Volunteer Battalion Northampton Regiment; Surgeon-Lieutenant J. W. Bone, 3rd Volunteer Battalion Bedfordshire Regiment; Surgeon-Lieutenant D. Monro, 1st Galloway Rifle Volunteers; Surgeon-Lieutenant W. K. Pauli, 3rd Volunteer Battalion Bedfordshire Regiment; Surgeon-Lieutenant J. Oldfield, 1st Volunteer Battalion Essex Regiment; Surgeon-Lieutenant C. Stephens, 3rd Volunteer Battalion Suffolk Regiment; Surgeon-Lieutenant J. Forsyth, 1st Essex Volunteer Artillery; Surgeon-Lieutenant W. T. Crawford, 4th Volunteer Battalion Derbyshire Regiment; Surgeon-Lieutenant P. D. Minchin, 2nd Volunteer Battalion "the Queen's" Royal West Surrey Regiment; Surgeon-Lieutenant J. Raywood, 5th Volunteer Battalion the South Wales Borderers; Surgeon-Lieutenant L. Demetriadi, 2nd Volunteer Battalion (the Duke of Wellington's) West Riding Regiment; Surgeon-Lieutenant J. W. Cook, 1st Volunteer Battalion the Lancashire Fusiliers; Surgeon-Lieutenant C. Bucknill, 2nd Volunteer Battalion the East Lancashire Regiment; Surgeon-Lieutenant D. Hamilton, 4th Volunteer Battalion the Manchester Regiment; Surgeon-Lieutenant E. McCarthy, 4th Volunteer Battalion the Cheshire Regiment; Surgeon-Lieutenant G. Hawkins-Ambler, 1st Lancashire Royal Engineers Volunteers; Surgeon-Lieutenant A. Renshaw, 3rd Volunteer Battalion the Cheshire Regiment; Surgeon-Lieutenant C. T. Green, 1st Volunteer Battalion the Cheshire Regiment.

THE MEDICO-SANITARY ASPECT OF THE SPANISH-AMERICAN WAR.

Mr. Carroll Dunham, writing in the *Revue Scientifique* of Jan. 7th on the medical and sanitary aspect of the Spanish-American War, repeats the often-told story of the inadequacy of the supplies forwarded to the American army in Cuba and of the failure of the transport authorities to convey the medical stores. The medical service of the Army Corps attacking Santiago had at their disposal the campaigning hospital of the first division, erected three miles east of Santiago, a hospital on the shore, and the hospital ship *Olivette* at anchor in the bay. On July 1st the hospital of the First Division consisted of three large tents for the operation tables and the pharmacy; a fourth large tent was reserved for wounded officers and half-a-dozen smaller tents for soldiers. There were 5 surgeons with less than 20 ward attendants. The hospital was capable of receiving 100 wounded, but it had no hammock, mattress, or pillow, the number of blankets was very small, and for spare linen there were only three dozen shirts. There was no food whatever for the patients except a little extract of meat and condensed milk brought in the luggage of one of the surgeons. As for the means of transport, there were only three ambulances in the whole army. The wounded commenced to arrive at 9 A.M. on July 1st. They lay on the grass exposed to the tropical sun by day and at night they took cold. The surgeons were on their feet twenty-one hours without rest, working all day, and at night by candle light, fired at by Spanish riflemen perched in the trees. Malaria was inevitable and yellow fever was introduced by refugees from the town. Things were not much better on the way back to America. The first ship, the *Seneca*, arrived at New York with about 100 sick and wounded.

The condensers could not provide enough fresh water so the wounds were washed with sea water and the passengers had to tear up their shirts to make dressings. The *Concho*, provided with 58 beds, arrived on July 29th with 172 sick and wounded. She had on board one medical officer who was himself suffering from illness and with him there was one hospital attendant.

THE ROYAL ARMY MEDICAL CORPS.

The *Army and Navy Gazette* of Jan. 7th, in dealing with the history of the military year, 1898, makes the following remarks: "The Army doctors have had their hearts gladdened, after years of vigorous agitation, by the issue of a Royal Warrant according to them the right of bearing military titles, whilst the old Medical Department, lately the Medical Staff, is now constituted a Royal Army Medical Corps. What the effect will be in attracting young men to the service remains to be seen, but at any rate some of the most pressing wants of the gallant and devoted body of men who are charged with the care of the sick and wounded have been met and Lord Lansdowne has thus earned the gratitude of the profession at large. It is for the profession of medicine now, the heads of schools before all, to show a proper appreciation of favours and assist the War Office to secure candidates in every sense suitable. If this is done we have no doubt the military authorities will even go further than they have at present in their endeavours to make the position of the Army medical officer comfortable and attractive. The future of the Army doctor now depends largely on the Army doctor himself and those who have influence over him outside the service. All the War Office for the moment can do is to watch events and be guided by the action of those to whom it looks for support. The support of which we speak ought certainly to be forthcoming."

THE SOUDAN EXPEDITION.

Since the occurrence of the battles at Atbara and Omdurman the remaining portion of the Dervish force under Ahmed Fedil has been attacked whilst crossing the Nile and badly defeated by Colonel Lewis, in command of the 10th Soudanese and some irregulars. We infer from Lord Cromer's speech to the Soudanese chiefs and sheikhs regarding the future policy of the Egyptian and British Governments that the conquered country is to be divided into districts and temporarily administered under resident military officials, very much as is done in India. We are naturally glad of this because it is what we have already indicated as in our opinion the best course. A few years' peace under such administration and government, will bestow a degree of prosperity, health, and happiness on the dwellers in the Soudan which they have not known for many years past—if they have indeed ever done so before.

THE ARMY MEDICAL SERVICE.

The announcement in the *London Gazette* of Jan. 10th of the new titles conferred upon medical officers serving at the Headquarter Office of the Army Medical Service was no doubt a cause of more or less surprise. Our interpretation of its object is, however, that it is simply with a view of placing the medical service upon a similar footing to that of other branches of the military service by assimilating the titles of medical officers in the Director-General's office to those of other military officers holding staff appointments in the War Office. The announcement in question, given on the previous page, is:—

Army Medical Service.—Surgeon-General W. Taylor, M.D., C.B., to be Deputy Director-General. Lieutenant-Colonel W. L. Gubbins, M.B., the Royal Army Medical Corps, to be Assistant-Director. Majors W. G. A. Bedford, M.B., and W. G. Macpherson, M.B., of the Royal Army Medical Corps, to be Deputy Assistant-Directors.

LEAN'S ROYAL NAVY LIST.

The eighty-fifth quarterly issue of this practically indispensable handbook is now on sale at the publishers, Messrs. Witherby and Co., 326, High Holborn, and 4, Newman's-court, Cornhill. Constant reference to its pages confirms its accuracy and the publication is now so well known as to make description unnecessary. The present issue is brought up to date and the work forms, as it has always done, a complete storehouse of reference with regard to our first line of defence.

THE APPOINTMENT OF MEDICAL OFFICER ON THE NEW VICEROY'S STAFF.

Lieutenant-Colonel H. Fenn, of the Royal Army Medical Corps, went from Calcutta to Bombay on the arrival of Lord Curzon in order to take up his appointment as Medical Officer of the Viceroy and his Staff.

NAVAL MEDICAL SUPPLEMENTAL FUND.

At the quarterly meeting of the Directors of the Naval Medical Supplemental Fund, held on Jan. 10th, Inspector-General W. H. Lloyd, M.D. St. And., in the chair, the sum of £65 was distributed among the several applicants.

THE AMEER OF AFGHANISTAN.

The Ameer, according to recent intelligence from Cabul, is stated to be seriously indisposed. In the event of his death political complications and difficulties may very probably arise in Afghanistan.

DEATHS IN THE SERVICES.

General Sir James Mouat, V.C., K.C.B., on Jan. 4th, at his residence in Palace-gardens-terrace, Kensington. (An obituary notice will be found in another column of THE LANCET.)

Lieutenant-Colonel R. Macrae, Indian Medical Service, Civil Surgeon of Dacca, has been appointed Civil Surgeon of the First Class, vice Lieutenant-Colonel R. D. Murray, Indian Medical Service.

Her Royal Highness Princess Christian of Schleswig-Holstein has consented to present the prizes to the London Companies Volunteer Medical Staff Corps, on Friday, Jan. 27th.

Correspondence.

"Audi alteram partem."

VACCINATION LITERATURE.

To the Editors of THE LANCET.

SIRS,—It has been suggested to me that the members of the medical profession might give valuable help in educating the public in the cause of vaccination by allowing samples of Jennerian literature to be on the tables of their waiting-rooms where they might be seen by their patients and others. The Jenner Society will be happy to supply such literature to anyone who will apply for it. I am glad to find from communications I am increasingly receiving that the members of the profession are beginning to take a much more active part than they have hitherto done in this good work by giving lectures and addresses on the subject, by correspondence in the public papers, and by joining in debates on it. I shall be pleased to give any assistance in this direction to any who may desire it.

I am, Sirs, yours faithfully,
FRANCIS T. BOND, M.D. Lond.,
Gloucester, Jan. 3rd, 1899. Honorary Secretary Jenner Society.

"RECRUDESCENCE OF PSITTACOSIS."

To the Editors of THE LANCET.

SIRS,—I see that your correspondent at Rome sends you an account[1] of the recrudescence of this complaint in Italy. It is endemic in this country and if cases are not notified it is that they are not recognised. Something over a year ago you were good enough to publish my views upon the subject, which views I have since seen no reason to modify. Still there is a danger that the disease may spread to human beings by contact with the diseased parrots and especially so if people are uncleanly enough to put the birds' bills into their mouths. One firm of importers states in its advertisements that it receives 80,000 (eighty thousand) grey parrots a year, and I have the best of reasons for saying that these birds invariably die within six weeks of their arrival from psittacosis, a form of fever akin to typhus, and they will continue to do so until either the public ceases to buy or the supply of parrots fails.

I have called attention to this excessive mortality for years past but it still goes on and there is no doubt that

[1] THE LANCET, Dec. 10th, 1898, p. 1591.

there is a risk of the fever extending its sphere of destructiveness. At first it was confined to the grey parrot, but now I find evidence of its fatal effects in other birds of the same family but different species coming from West Africa, and also, quite lately, in other birds, and although inoculation failed to convey the disease to pigeons and guinea-pigs, exposing the former to immediate contact for some days with a death-smitten parrot was effective in transplanting the fever. So it may go on, and probably will, unless something is done to purify the dens to which the birds are conveyed on their arrival at the coast, the cages or crates in which successive batches are imported, and even the part of the ship in which the poor creatures are lodged during the voyage.

To show how deadly is the scourge and how persistent the infection people have written to me to say that they have had several (from 3 or 4 to 20) die within a few weeks of buying them, and they could not imagine why it should be so, for not only had they taken every precaution in the ordinary way but they had lost birds which had been brought over privately and which had never been near a dealer's shop. The explanation is simple. The cage in which one of these birds has died is henceforth a source of infection and can only be cleansed by stoving, all domestic methods of disinfection utterly failing to stamp out the germs of the disease which I have reason to believe has its origin in overcrowding and dirt.

Personally I have failed to trace any connexion between fever in a favourite parrot and any ailment subsequently manifested by its master or mistress, but I can conceive that such is possible; therefore it is high time that sanitary authorities should interfere and see that the "emporia" whence these birds are distributed over the country are put into a healthy, wholesome condition, or if this be found impossible that they be compulsorily closed, for humanity revolts at the thought of the wholly preventable massacre of the innocents and its possible consequences. All dealers in livestock should be compelled to take out a stiff yearly licence and their premises should be periodically inspected by competent officials who should report to a central authority vested with sufficient power to put down a nuisance of which the consequences may soon prove to be more dangerous to the public welfare than is generally supposed.

I need say no more about bird and pet stores; anyone who likes can make a tour of those in London and judge for himself or herself, but I have no hesitation in affirming that the result will be a prompt decision that something should be done, and done quickly. I find that although the lungs are affected in some cases the disease concentrates its virulence in the liver, kidneys, and more particularly the spleen.—I am, Sirs, yours faithfully,

W. T. GREENE, M.D., T.C.D., F.Z.S., &c.

Belvedere, Kent, Jan. 4th, 1899.

POISONING BY BROMOFORM.

To the Editors of THE LANCET.

SIRS,—In THE LANCET of Dec. 31st, 1898, your Manchester correspondent records a case of poisoning by bromoform in Lancaster. I think the following case may be of interest as it seems to resemble the one mentioned with the great difference that my patient recovered.

In the early part of last year my partner's five children were suffering from pertussis and, other remedies failing, he decided to try bromoform, one and a half drachms of which were put in a mixture made up to eight ounces with mucilage and water. The eldest girl, aged eight years, took one tablespoonful and the others smaller doses according to their ages; for four or five days they took the medicine and were so benefited by it that it was discontinued. On the sixth day, about 4.30 P.M., I was sent for, as my partner was out, and on arriving I found the eldest girl in the following critical condition. She was lying in a wholly unconscious state, snoring deeply. Both pupils were strongly contracted and hardly reacted to light. The conjunctival reflexes were almost lost, the pulse at the wrist was scarcely perceptible, and the heart-sounds were very weak. The face was pinched and the lips were blue. I gave two drachms of ipecacuanha wine which produced fairly free vomiting, and followed this up by a hypodermic injection of $\frac{1}{100}$ gr. strychnine and applied hot flannels over the heart. As the improvement in the child's condition was very slight I gave an injection of two drachms of whisky under the skin of the chest and an enema of strong coffee. The pupils were now more dilated and the pulse was better in strength and quality and though still unconscious the patient's general condition had improved. Her father then returned and drew my attention to a peculiar sweetish smell which was evolved from the vomit and breath and on inquiry we received the following particulars of the onset from the mother. The girl had a violent fit of coughing at 3 P.M. and was given a dose of the bromoform mixture, the last in the bottle. She then lay down. From half to three-quarters of an hour later her mother heard loud snoring issuing from the room and being unable to rouse the child sent for me. About 8 P.M. the patient recognised her father and seemed to be improving. At 10 P.M. there was a change for the worse; the character of the respiration, however, changed from the loud snoring to a soft sighing, becoming so feeble that we resorted to artificial respiration. Owing to the recurrence of the symptoms we suspected that some of the drug must be left in the stomach which we accordingly washed out with an ordinary syphon pump and noticed that the water which returned had the same sweetish smell, which smell the child's breath retained for several days. The remaining treatment through the night consisted in putting the patient near an open window, where she gradually recovered, and with the exception of a very bad headache the next day she did not seem much the worse for the misadventure. I am, Sirs, yours faithfully,

Littleport, Cambs, Jan. 9th, 1899. HAROLD W. EVANS.

"THE 'OPEN-AIR' TREATMENT OF TUBERCULOSIS."

To the Editors of THE LANCET.

SIRS,—Your correspondent, Staff-Surgeon Gipps, in his anxiety to emphasize the value of Alpine climates has been guilty of some exaggeration and aroused the suspicion that he knows little of the results obtained in non-Alpine sanatoria in Europe and America. Anybody who had not specially studied the subject would be led by a perusal of Staff-Surgeon Gipps's letter to believe that the open-air treatment is only possible in Alpine and other specially favoured climates. Alpine sanatoria need no puffing, but they are by no means suitable for every case of consumption, even in an early stage, and are not available for the majority of suitable cases in this country. It is therefore fortunate that exceedingly good results are obtained in non-Alpine sanatoria, which constitute by far the larger number of those in existence, and some of which are no more favoured by soil and climate than many parts of the British Isles.

The results in non-Alpine sanatoria of Germany were sufficiently good to warrant the insurance companies there in paying between three and four million marks in 1898 for the maintenance and erection of such sanatoria for the people. One of these insurance companies has published elaborate statistics of 1541 phthisical patients, showing that in such sanatoria general improvement has taken place in 85·5 per cent., local improvement in 61·1 per cent., and complete restoration of working capacity in 71·8 per cent. In 15·5 per cent. the local signs were slight on admission and disappeared during treatment; in 15·4 per cent. they were unchanged; in 42·6 per cent. the local signs were well marked on admission and greatly improved on leaving; in 13·9 per cent. the local signs remained of a well-marked character and in only 6·6 per cent. they increased. It is also shown that a large proportion of those treated in former years have remained well. This is but one out of many examples of the value of rational treatment in medically-managed sanatoria even where the climate is not ideal. For the sake of the many who cannot go abroad, owing to expense, domestic ties, and a variety of medical and other reasons, I would urge Staff-Surgeon Gipps to be less sweeping and more accurate in his statements and not try to take from such patients their best hope of recovery. To exalt the value of climate (great as it is) at the expense of medical supervision of the details of daily life is a most dangerous policy which will only lead to a further extension of the "go-as-you-please" methods which are answerable for at least half the failures. What has been done in the Sharon Sanatorium in a consumption-ridden district, and at German hill sanatoria where the weather and climate are at times far

from ideal, can certainly be approached, possibly equalled or surpassed, in our own land, while many lives will thus be saved which under less careful and systematic treatment would inevitably drift to an unfortunate end.

I am, Sirs, yours faithfully,

Welbeck-street, Jan. 3rd, 1899. F. RUFENACHT WALTERS.

A QUESTION IN ANÆSTHETICS.

To the Editors of THE LANCET.

SIRS,—I think anyone reading the able article in THE LANCET of Dec. 17th entitled "On the Administration of a Certain Mixture of Chloroform and Ether in Gynæcological Operations by Means of a Clover's Inhaler without the Bag" must be struck with one idea—namely, if the long ago admitted advantage of a combination of ether and chloroform is so safely and easily given in a "Clover," how is it that the London anæsthetists do not use it for this purpose and why are some of them experimenting with an elaborated instrument such as has been described in the Transactions of the London Society of Anæsthetists? We are usually taught to carefully avoid giving $CHCl_3$ in a closed apparatus of any kind. Have we to reconsider this point? I think most medical men have satisfied themselves that chloroform is a dangerous anæsthetic and to give ether without gas is almost cruelty, for all patients describe the first half minute of the administration as truly awful, and then the after nausea and pain in the throat are most disagreeable. I think the London anæsthetists owe to the profession a definite criticism of the above-mentioned paper for or against it.

I am, Sirs, yours faithfully,

St. Day, Cornwall, December, 1898. E. H. WORTH.

OPIUM-SMOKING.

To the Editors of THE LANCET.

SIRS,—I implicitly recognise the superior wisdom of your reviewer who in THE LANCET of Dec. 31st, 1898, meets every statement in a recent book of mine somewhat in the manner of Mr. Burke's celebrated colleague—by a flat contradiction. Still, he makes one assertion so opposed to the experience of all who have any practical acquaintance with the subject that I think he should condescend to furnish some corroboration. I remarked that opium cannot possibly be smoked like tobacco, every particle of alkaloid being thus promptly burnt up and not volatilised. That, he says, "is contrary to the experience of many." Will he kindly give his authority or cite a single instance in which a person has felt the slightest opium influence by smoking opium in any other way than with the one form of pipe perfected by generations of Chinese? He may have been misled by the popular fallacy that Manilla cigars are soaked in laudanum, but has no right to publish that as scientific fact.

The inhalation of the volatile opium alkaloids under medical supervision is a therapeutic power of high value hitherto unduly neglected. Without recapitulating all the maladies in which it is of use it may suffice to say that pain of every kind is relieved by the anodyne effects, chronic wasting disease of all species by the capacity to check tissue-waste. The latter point indicates its employment in advanced age to promote longevity. Hence if your reviewer can indicate some easier method than the rather delicate technique of the ordinary opium apparatus of procuring these benefits he will confer a boon on many such sufferers. I am, Sirs, yours faithfully,

HERBERT SNOW.

Gloucester-place, Portman-square, W., Jan. 3rd, 1899.

*** In expressing our dissent from Dr. Snow's statement that if opium be smoked like tobacco all the essential principles are burnt up and none inhaled we based our opinion chiefly on our personal knowledge of cases in which the usual anodyne and hypnotic effects of the drug have followed its administration in this manner. The superiority of the Chinese method of smoking opium consists in the fact that when it is employed a much larger proportion of the active principles is inhaled than when the drug is smoked with tobacco in an ordinary pipe.—ED. L.

MILITARY SERVICE FOR MEDICAL MEN IN FRANCE.

To the Editors of THE LANCET.

SIRS,—May I correct a mistake that was made in THE LANCET a few months ago? The period of military service is not three years for University students. The medical student is obliged only to serve for one year; the two remaining years are due only if he is not *docteur ou interne* at the age of twenty-seven years, which happens very seldom indeed. I am, Sirs, yours faithfully,

HENRY COINTEPAS,
Externe des hôpitaux de Paris.

Rue Franklin, St. Denis-sur-Seine, France, Jan. 5th, 1899.

THE CONSCIENTIOUS OBJECTOR.

To the Editors of THE LANCET.

SIRS,—Since the appointment of the Royal Commission, although there is at present a lull in the storm, the cost to the country from small-pox has been enormous, to say nothing of the dreadful suffering and deaths (known only to those who witness them), and now vaccination costs more than double and is rendered inefficient. No wonder, therefore, that boards of guardians are flatly refusing to carry out the Act. Will our non-conscientious legislators take any steps towards remedying the error they have committed? It appears to me the least they can do, and that without a day's delay, is to pass "an Act to amend the Vaccination Act." No doubt when the conscience clause was passed it was thought that the magistrates who had no votes to lose would act as a buffer between the Members of Parliament and the anti-vaccinationists, and nice buffers they are proving themselves.

The Act reads that "they are to *satisfy* themselves that a man has a *conscientious* objection," and how are they doing it? In one instance a long row of applicants were told to *hold up their hands*, and all who did so were granted certificates. Now if the Act had been worded in such a way that certificates were to be granted to "those who had a simple objection" or "to all applicants" the magistrates would not be guilty of dereliction of duty, as they now are. With a few notable exceptions—such as Mr. Corser and Mr. Mead—they are incurring an awful responsibility by this neglect of duty. The Vaccination Act is now literally left to them to carry out and although they ought not to have been put into this position they should either do their duty or resign or, as one medical magistrate has done, retire from the bench when applications are made. Instead of that they often do not even charge the highest fees and make all the difficulty they can, but on the contrary encourage the ignorant and misguided in their wicked folly.

Vaccination is now made perfect by the new Act and instead of giving it a trial which in time would even convince a rabid anti-vaccinationist, it is being rendered nugatory. A day of reckoning will surely come, as unless the evil is at once remedied ages yet unborn will live to curse us when for want of a simple precaution there will be a return to the days of the Black Death with its fearful cordon of isolation as the only means of escape. If the plain and guilty alone suffered it would be different, but there are the comely and innocent who have to be considered when, if life is saved, disfigurement, blindness, deafness, and other sequelæ (very common in the worst form of small-pox of which this generation knows nothing) render that life worse than death. I am, Sirs, yours faithfully,

WILLIAM WOODWARD, M.D. St. And.,
Late Public Vaccinator for upwards of thirty years to the Worcester District.

Worcester, Jan. 10th, 1899.

"THE PAY OF COLLIERY SURGEONS."

To the Editors of THE LANCET.

SIRS,—I read with great interest your comments on the pay of colliery surgeons in Durham in THE LANCET of Nov. 12th, also on the pay of colliery surgeons in the Eastern Valleys, Monmouthshire, in THE LANCET of Dec. 24th, 1898. In the annotation on Dec. 24th it is mentioned that the Western Valley surgeons were paid better than the Eastern Valley surgeons. I can only compare the pay of the Western Valley practitioners with that of their Durham brethren as I do not know how they are paid in the Eastern

Valleys. Here they are paid by stopping twopence per week per man for every pound he earns. Taking an average for the last few years the pay has been in this part under twopence per man per week, or if we had been paid as the Durham surgeons had been paid—i.e., threepence per man per week—our income would have been considerably larger. This average does not include the six months' strike in which the medical attendance was continued and there was no pay. Twopence in the £ covers all the medical attendance and what drugs they want other than the drugs prescribed—i.e., vaseline, castor oil, &c.

I am, Sirs, yours faithfully,

WESTERN VALLEY SURGEON.

Nantyglo, Mon., Jan. 2nd, 1899.

A PRACTICAL EXAMINATION PAPER.

To the Editors of THE LANCET.

SIRS,—I enclose a copy of the paper set by the Conjoint Board in the Second Examination in Physiology as a specimen of what such a paper ought to be. The six questions give a good range of subjects, all of which ought to be familiar to the student who hopes to be a practitioner. I wish the examiners for the Fellowship would follow suit.

I am, Sirs, yours faithfully,

AN OLD EXAMINER.

[ENCLOSURE.]

1. What are the functions of the roots of the spinal nerves? By what experiments have these been determined?
2. Describe the voluntary muscle-fibres. State how you would make a microscopic preparation to show their structure.
3. Describe the muscular mechanism of the respiratory movements. What influence have these movements on the circulation?
4. How can the velocity of the blood-stream be determined in an artery, a vein, and a capillary? How and why does the velocity vary in each kind of vessel?
5. Describe the digestive processes that occur in the small intestine. State the parts played by the pancreatic juice, bile, and succus entericus respectively.
6. How would you estimate the urea in urine? How is urea formed in the body?

PRESERVED GLYCERINATED CALF VACCINE.

To the Editors of THE LANCET.

SIRS,—The results of the trials of calf vaccine during the year 1897 which were published in THE LANCET of April 23rd last have been valuable in proving (1) that as a general rule the average length of activity of glycerinated calf vaccine is limited to a few weeks only, during which time the activity varies inversely with the age and therefore that it cannot be relied upon for any given period; and (2) that reliable calf vaccine has been obtained during the colder months and in the heat of the summer and autumn. It also appears (from private records and observations) that certain different characteristics of the calves do not affect the quality of the vaccine taken therefrom; for example, both active and inactive vaccine have been generated upon calves of the same colour, age, weight, and sex when vaccinated with the same care, by the same person, in the same place, and with equally reliable vaccine. Nor does the examination of the dead carcass yield any proof of activity of the vaccine taken from that particular animal. It therefore appears certain that with our present knowledge and experience it is impossible to produce *at will* calf vaccine which is active and will retain its activity for any definitive period, though cases appear (as if by accident) where a calf will generate fine vaccine which will retain its activity for a much longer period than is sufficient for all practical purposes. Here it may be questioned whether bacteriological investigations may not be out of place until the good quality of the vaccine has been ascertained, in order that when the bacteriologist has satisfied himself that the "extraneous microbes" have disappeared he may also be certain that the activity of the vaccine has not also disappeared, if it were ever present.

Though we are at this time unable to select with certainty an animal upon which vaccine of prolonged activity may be generated a study of the facts made evident from long experience may give us that desirable power. These facts are, first, that the more reliable vaccine is generally that which is produced in the cold months, and, secondly, that a great factor of unreliability is changeable weather. All that has been said of calf vaccine must be also applicable to human vaccine.

From these considerations the importance of being able to select such calves as will generate vaccine of the quality desired is evident and it naturally follows that to obtain with certainty perfect vaccinations in man or animal we must discover that condition in either which will reproduce in its system similar results for both cases—the patients and the animal must be synonymous. In each case the soil must be studied as well as the seed; both must be suitable for the end desired.

It is quite certain that the inability to judge of the activity of vaccine taken for storage obtains both in the public vaccinator using human vaccine and the producer of calf vaccine, for both are alike ignorant as to the reliability of the vaccine which they have stored. The more perfect mixture of the vaccine and glycerine by the invention of Dr. Chalybans has perhaps done more to preserve the activity of calf vaccine than anything else.

I am, Sirs, yours faithfully,

Dec. 19th, 1898. A. B. C.

*** Our correspondent is referred to an annotation on p. 107.—ED. L.

NOTES FROM INDIA.

(FROM OUR SPECIAL CORRESPONDENT.)

The Plague Commission at Hyderabad.—The Progress of the Epidemic.—The Report of the Austrian Commission.

THE Plague Commission held their first sitting in Hyderabad on Dec. 19th, 1898, when Lieutenant-Colonel Lawrie, I.M.S., Mr. Stevens, Dr. Mullanah, and Captain Johnson, I.M.S., were examined. Lieutenant-Colonel Lawrie first described the measures which had been taken in the Nizam's dominions to stamp out the epidemic. The disease was probably conveyed into this district by refugees from Sholapur. The measures were: (1) evacuation of the infected villages; (2) destruction of the infection by burning the floors and walls (surfaces) of infected houses by fire; and (3) disinfection of useless clothing and bedding by burning and of bedding and clothing generally by boiling. Lieutenant-Colonel Lawrie was a strong advocate for disinfection by fire for the following reasons: (*a*) it destroyed the infection of the disease; (*b*) it cost the Government nothing except for supervision; the people willingly employed it themselves under (our) trained agents and workers; (*c*) it was popular with the villagers and ryots; and (*d*) it not only destroys infection but it also destroys the food the plague microbe likes and by which it is kept alive and toxic. The people remain in their camps and do not scatter themselves to spread the disease over the country. Lieutenant-Colonel Lawrie stated that rats inoculated with floor scrapings in which the bacillus was found died with all the symptoms of plague and the same bacillus was discovered in their glands and blood. He asserted that the plague bacillus could be separated from the dust of floors in plague-infected houses. He recounted one result of his visit to Bombay where he discovered the plague germ at one hospital in the ground where an old man had lain for several days beside the cot of his sick grandchild and had then contracted plague and died. A rat which was inoculated with a solution made from this floor scraping developed the symptoms of plague and died. The same bacillus was found in its tissues and organs.

With reference to Haffkine's fluid and inoculation for plague Lieutenant-Colonel Lawrie made some extraordinary statements. He said that Haffkine's fluid was not a serum but a putrescent organic liquid—a putrid broth containing a large number of the micrococci of putrefaction and occasionally pathogenic organisms. He said he could not conscientiously recommend it and he did not consider it right to perform such an operation as inoculation with a fluid containing putrid organisms. He said that what was practically compulsory inoculation led to the spread of plague by causing people to fly from their homes. He was aware that there were other bacilli which closely resembled the plague bacillus morphologically but he did not know that such bacilli were commonly found in water and in soil. He

admitted that large doses did protect rabbits to a considerable extent.

With regard to this evidence it may be said that inoculation has been everywhere absolutely voluntary and it has been stated over and over again in official notices that inoculation is entirely optional. Lieutenant-Colonel Lawrie implies that the fluid used is not sterile and that no proper experiments have been made to ensure this (which is incorrect). According to Lieutenant-Colonel Lawrie the inoculation fluid of M. Haffkine is calculated to produce blood-poisoning, abscesses, and ulceration. As a matter of fact it does not. In Bombay alone over 32,000 persons of all classes and races have been inoculated and not one has been overtaken by the dire results attributed by Lieutenant-Colonel Lawrie to inoculation. It is obvious that had the fluid been found to contain the organisms of putrefaction it would have been prohibited immediately. Moreover, the Director-General who was himself inoculated has reported to Government after extensive inquiry that its results are most encouraging. Dr. Yersin was supposed to have found plague microbes 7 in. below the soil but these Dr. Bitter said were not plague microbes at all. Others have tried to find them and have failed. Every one knows that the Government have not been hasty in judging of the effects of inoculation and were Lieutenant-Colonel Lawrie's statements even partially true the operation must have been condemned long ago. Mr. A. H. Stevens, the Deputy Plague Commissioner, said that the Nizam's Government remained in absolute ignorance of the outbreak of plague in Hyderabad territory until about two months after its actual appearance. The difficulty in plague work is to obtain early information. He said that the villagers fully recognised the value of evacuation which had been carried out in every village infected with plague. The method of disinfection which he had employed with apparently great success was the kiln method of burning the floor surfaces and of burning and boiling the bedding and clothes. The method destroys infection, costs little, and is popular.

The plague returns for the Bombay Presidency show very little improvement, there being 2697 deaths recorded as compared with 2728 the week previously. In Bombay city there were 106 deaths from plague as compared with 75 in the week preceding. Karachi does not seem to be able to absolutely clear itself, a new case now and again appearing, and Poona also reports two fresh attacks and deaths. The Poona district generally shows higher figures. It is reported that at railway stations where medical inspections take place 24 cases only were detected. After a long interval which led to the hope that plague had disappeared from the Punjab 2 more cases have occurred at the town of Rahon in the Jullunder district. At Bangalore on Dec. 18th Professor Wright of Netley, a member of the Plague Commission, inoculated some 250 men and officers of the 2nd West Riding Regiment against enteric fever.

The portion of the report of the Austrian Commission of most interest is that containing the late Dr. Müller's conclusions concerning the pathology of infection. He thought that the disease originated in an infection through the skin which remained localised for a time, but that primary plague pneumonia unquestionably entered through the respiratory passages. He contended that in all cases (except, perhaps, the pneumonic) there was glandular swelling, although the primary bubo might not be discoverable. Dr. Müller did not agree with those who held that in all cases of recovery the bacilli remained localised in the swelling and did not invade the blood. He said that "a patient does not die because he has bacilli in his blood and does not recover on account of their absence." He thought that whether the organism would triumph over the disease depended upon the degree of natural power it possessed against the poison of the plague. He said that general infection (of the bacilli) had occurred in patients who had recovered. (Most authorities hold that the presence of bacilli in the blood is a certain sign of a fatal termination.) Those who hold Dr. Müller's views—viz., that it matters little whether the bacilli invade the body or not—are opposed to interference with the gland, to experimental punctures, to large incisions, and to clearing out the contents. The theory of infection through the skin has had careful attention and it is only in a small proportion of cases that likely spots of entry have been discovered. The natives with naked legs get enlarged glands in the groin in about 66 per cent. of cases, but those who cover their feet and legs get the glands in the groin enlarged in about the same ratio. Moreover, the inguinal glands are affected as often as the femoral. The bacilli are seldom found in the blood except a few hours before death. As the buboes suppurate in a very large proportion of cases and many cases die from pyogenic infection the object of opening the buboes when softening (from sloughing or suppuration) has occurred is to diminish the dangers of other poisoning. Plague cases that live long enough for the glands to suppurate seldom or never die from plague. The plague bacilli seem to disappear from the glands under the influence of sloughing or suppuration. There is more to be said against Dr. Müller's theory than for it. The bacilli are probably localised at first and the toxin of plague is derived from the local manufactory and may or may not kill of itself. Pneumonic cases have not the bacilli so localised and are almost invariably fatal. When the bacilli for some reason become generalised the case is probably without doubt fatal, although it is conceivable that some subjects may have sufficient resistance to overcome even this invasion.

Dec. 24th, 1898.

ABUSE OF THE IRISH MEDICAL DISPENSARIES.

(FROM OUR SPECIAL COMMISSIONER.)

IN dealing with the new Irish Local Government Act in THE LANCET of Jan. 7th details were given concerning the appointment of the dispensary medical officers who throughout Ireland attend on the poor. The selection of these officers, based on religious and political views rather than on the technical competence of the candidates, is a grievance which affects the public interest, though the public manifest very little concern in the subject. It is to their advantage that the best men should attend to the sick and to the sanitation of the district, for the dispensary medical officer is generally also the medical officer of health. The elections, however, as already fully explained, are not contested on this basis. But whatever fault may be found with the method of selection the dispensary medical officer when appointed should be treated with common humanity and common fairness. This, however, is often not the case. The work which he has to do is frequently so heavy as to be almost beyond endurance. It is not so much the number of patients who have to be seen but the enormous distances that have to be gone over in all weathers. The ground is rough and the cottages may be dotted about amid hills and mountains. A Local Government Board report sets forth that some of these districts measure 25 × 12, 18 × 13, 25 × 10, and 21 × 11 miles. These are, of course, the largest districts—those in which the population is most scattered and sparse. Other districts are not half of the size. The dispensary medical officer generally arranges to be in attendance in different parts of his district on certain days of the week. At these centres he has a dispensary cottage or, in any case, a room kept ready for him to receive the patients who live in the neighbourhood. These are as it were out-patients; they come to him not at his home, but to the dispensary cottage in their part of his district. Such patients are bearers of white tickets and constitute probably about 80 per cent. of the total number of cases. They need not be seen at their own homes or at other than the appointed hours. When, however, a red ticket is presented to the dispensary medical officer he is obliged to go at once to the patient's house, however far that patient may live or whatever the hour of the day. No matter what private business he may have the dispensary medical officer must put all aside to attend to the red ticket. All his other and paying patients must be neglected so as to obey the red ticket summons. As one dispensary medical officer put it to me, "Why, I should have to abandon the Lord Lieutenant himself rather than keep the owner of a red ticket waiting."

The distribution of these red tickets which thus hold the dispensary doctor in a state of thraldom naturally constitutes a precious power of patronage. The dispensary committees have not only the appointment of the dispensary medical officer, but as they are the principal distributors of the tickets, white and red, the members of this committee likewise decide who shall be his patients. As many of the dispensary committee-men are roadside shopkeepers and publicans the distribution of tickets entitling the holder to medical advice and medicine free of charge is most useful to

these tradesmen. It enables them at the cost of the medical officer to render a service to their customers. The Poor-law regulations say that the dispensary medical officer must attend any poor person who has received such a ticket, but though petitioned on the subject over and over again for the last forty years the Poor-law authorities have persistently refused to define what constitutes a poor person. Thus if a farmer in a good position, with several hundred pounds in the bank, sends to his grocer for a ticket for his child it is easy to understand that the grocer would not refuse the ticket on the ground that the farmer is not a poor person. The farmer undoubtedly is not a poor person, but the grocer knows that he is a good customer and that is by far the most important consideration. It is not the grocer's business to defend and protect from abuse the professional interests of the dispensary medical officer, but it is his business to sell his groceries and with this in view he would not fail to oblige a customer. With the publican the same arguments apply as with the grocer. He has also his customers to oblige. So much is this the case and so frequent are the demands for tickets that he often leaves a blank ticket book in the hands of his potboy, a youth often sharp and vivacious but who is still less likely to trouble himself about the position and economical interests of the medical profession. Under such circumstances no trouble whatever is taken to prevent abuse. Most of the well-to-do cottage farmers are on the rates as dispensary patients. In certain districts there is absolutely no private practice of any description whatsoever. Farmers who have ample means issue tickets for their own children. The dispensary medical officer, practically speaking, has no redress. In theory, when he finds that a patient can pay he may bring the matter before the next meeting of the dispensary committee and they have the power to cancel the ticket. This sounds plausible, but though the committee should meet every month it frequently does not come together for three or four months and by that time the patient in all probability will be either dead or convalescent. Then the meetings of the dispensary committees are often most unbusinesslike and informal. They sometimes consist of a little conversation held between committee-men by the side of a car or standing under a hedge. If the medical officer has a case of abuse he must find out the precise car or hedge where his committee-men are meeting, and in such an uncomfortable position they are not likely to listen to any lengthy exposition of grievances. Besides, what is there in common between the thoughts and work of the small farmer, of the grocer, the publican, the village huckster, and the members of the medical profession? Yet these are the class of men who constitute the dispensary committee and who appoint the dispensary medical officer, and if the latter has a complaint to make he must bring it to the notice of the very persons who have committed the abuse. It is not likely that the committee will blame one or more of their own members.

The financial is not the only side of this question of abuse. Sometimes a dispensary doctor is called away from his home out of sheer malice. A rancorous committee-man can destroy the medical officer's professional life. If the latter is a poor man his committee may tyrannise over and humiliate him on innumerable occasions. A common method of destroying a medical man's peace is so to contrive the distribution of red tickets that he can never remain at home. Boys with red tickets are set on watch. No sooner has the medical officer returned and is about to sit down to his dinner than a boy enters and presents the red ticket. If the practitioner does not set forth at once there are enemies watching who have timed the entrance of the boy to deliver the ticket and the departure of the medical officer to see the patient. Perhaps the patient lives in some distant village. Then when the medical officer has returned home from the long journey another red ticket from the same village is delivered to him. He might have seen both patients at his first visit to the village, but great care is taken so to time the delivery of the tickets as to compel him to do the journey twice over. It will easily be understood that with the exercise of a little ingenuity and a great deal of malice a committee-man by the issue of red tickets could render the dispensary medical officer's life quite unbearable and this I am assured has been done more than once.

Nor are such abuses confined to rural districts. One of he Dublin dispensary doctors complained to me of the distribution of tickets by whisky-sellers. He found also that tickets were given to servants in the employ of wealthy families and these were a class of patients for whom at least a small payment could be made. Among his dispensary patients he had the wives and families of several coal-dealers. These people often looked poor enough though the husbands would be making from £2 to £3 a week. The wives, however, frequently got only about 10*s.* a week on which to keep house and hence the squalor and the readiness with which they obtained dispensary tickets. But why should medical men have to attend gratuitously on the families of men who spend nearly all their money on drink? In his opinion, at least a quarter of the red tickets issued in Dublin constituted cases of abuse.

An absurd theory was propounded by the Irish Local Government Board that the dispensary medical officers were not entitled to the same consideration and similar pensions as other civil servants because they did not give up their whole time. This is a great fallacy. It is the ordinary civil servant rather than the dispensary medical officer who does not give his whole time. He has his office hours but afterwards he is absolutely free and his own master. Not so with the dispensary medical officer for he may be called out at any time of the day or night. The dispensary medical officer who was describing this situation to me related how on one Christmas day he was called out three times to see three different patients who were in each case suffering from typhus fever. At the same time this medical man told me an anecdote concerning the dispensary medical officer at Markethill in the north of Ireland. This medical officer was ill when a messenger came and offered him two guineas to go to see a patient who lived at a considerable distance. He replied that he was too ill to go out and that he preferred to lose the two guineas rather than to run the risk of aggravating his condition. The messenger replied that he would have to go all the same. The patient thereupon procured a red ticket, and as the practitioner could not obtain a medical certificate entitling him to refuse his services he had to go though in so doing he risked his life and (as the patient had now got a red ticket) could not claim the two-guinea fee which had been previously offered but was obliged to attend the patient for nothing. The legend that Irish practitioners will not see any patient unless they receive a guinea fee has done much to destroy the sympathy which would otherwise have been felt for the dispensary medical officers. But it should be understood that this guinea fee covers several visits and is therefore not an extravagant charge. Nevertheless it provides many people with a pretext to go about begging for dispensary tickets; also there is often a singular want of pride among many people and they do not seem at all to object to account themselves paupers if they can save even a small sum of money.

On Nov. 6th, 1896, Sir William Thomson, when president of the Dublin Medical Association, headed a deputation in the interests of dispensary medical officers which waited upon the Chief Secretary for Ireland. All the medical licensing bodies were represented. Mr. Gerald Balfour then said that the desirability of giving dispensary medical officers a pension was recognised in principle but that the precise method of so doing had not been settled. In England medical men worked for very low fees. In Ireland medical men calmed a guinea fee and this must be altered before the red ticket system could be reformed. Then the Government had to take into account that in spite of the hardships endured by the dispensary medical officers there were plenty of medical men who eagerly competed to obtain such posts. Mr. Balfour would like to see them better paid but he did not know how he could interfere with the local authorities of Ireland. Mr. Morley and other Chief Secretaries for Ireland have answered similar petitions in the same manner. It is the stock reply duly prepared by the Irish Local Government Board and reproduced on suitable occasions for the use of either Liberal or Conservative Chief Secretary. Party politics make no difference in the unsympathetic attitude of the Irish Local Government Board towards the medical profession. The Chief Secretary for Ireland whose tenure of office is but temporary and as insecure as the fate of the party to which he belongs knows little or nothing about these matters. But the Irish Local Government Board is a permanent institution and these grievances have been brought before it over and over again. The Board itself should have made proposals for reform. Sir

William Thomson mentioned a district which measured a hundred square miles where there was but one dispensary medical officer and he was seventy years old. He could not retire, for the population was so poor that it was impossible to get any private practice. These are facts well known to the Irish Local Government Board, but that Board has never moved in the matter. The policy seems to be not to deal with any question unless absolutely forced to do so, and unfortunately the medical men in Ireland are lacking in cohesion; they do not work together as a body. Such efforts as have been made to unite the profession have so far failed and therefore there has not been a strong enough pressure brought to bear upon the Irish Local Government Board. While the medical men are content to submit to unjust treatment the Government will not go out of its way to redress the grievances of the dispensary medical officers.

The reform which many medical men themselves desire is that the dispensary medical officer should become a civil servant in the employ of the Government and not of the local authority. Candidates should be subjected to a special examination in regard to public health questions and as to their capacity to act as surgeons for the police, the prisons, the bridewells, the coastguards, &c. These functions added to the duties of dispensary medical officers would constitute a fair total income, making it worth while for high-class men to apply and to qualify for the special duties. As it is the local authorities only pay half the cost of the medicines and the salaries of the dispensary medical officers. The other half is paid by the central authority, therefore the Local Government Board of Ireland has as much right to nominate as the local authorities. If Ireland is to be civilised from the sanitary point of view it would be worth while for the Exchequer to pay more than half the cost so that the central authority could appoint men who would be competent and independent of local intrigues and pressure. This is more needed in regard to public health than in respect of the abuse by which medicine for others than the poor is obtained out of the rates. The Poor-law guardians and the dispensary committee-men are themselves often the chief offenders. They distribute both white and red medical relief tickets to their well-to-do customers and to their own families and otherwise commit abuses. They often set sanitary laws at defiance and have sometimes even been paid for their votes in the election of a dispensary medical officer. Under these circumstances these petty local bodies should be deprived of the power of nominating and tyrannising over the dispensary medical officers. They have given sufficient proof of the improper use which they make of such powers. For instance, according to the Act a medical officer should receive a guinea for attending a court in regard to a prosecution or to obtain a magistrate's order for compulsory burial, &c. But now it will be seen on referring to advertisements that the local authorities require applicants to contract themselves out of these advantages. Thus, for instance, the Rathdrum Union, Aughrim Dispensary district, recently advertised for a medical officer and the advertisement stated that the salary would be "£120 a year as medical officer and £15 a year as medical officer of health, such salaries to be taken to include remuneration for all services rendered under the Labourers Act and Sanitary Act as well as the Medical Charities Act, and the payment of a substitute when the doctor is absent owing to other cause than ill-health caught in the discharge of his duties." Again, the Sligo Union advertised for a medical officer for the Cliffoney Dispensary district. The salary was £100 and £20 more as medical officer of health, together with the usual vaccination and registration fees. Then comes this clause in the advertisement: "The person appointed must attend and give evidence in all sanitary prosecutions instituted by the sanitary authorities without any additional remuneration." It need scarcely be explained that these conditions will tend to reduce the number of prosecutions. A medical officer of health who only receives £20 a year cannot be expected to spend many days in law courts. But if he received an extra guinea for each case there might be some chance of prosecutions being instituted. As explained on a previous occasion the local authorities are, in the main, desirous of preventing any sanitary reform. The advertisements quoted above are evidence of the little concern felt in this respect and are in direct opposition to the spirit of sanitary legislation since they call upon the candidates to contract themselves out of the Sanitary Act. The Legislature, to encourage the prosecution of persons who offended against the laws of health, stipulated that the medical officer who gave evidence, &c., should receive a fee of a guinea. But the Sligo Board of Guardians sets itself above the Imperial Parliament and Government. It says that the medical officer shall not receive these guinea fees and by such an act it seems anxious to discourage instead of encourage prosecutions under the sanitary and other laws enacted for the benefit of the public health. Such advertisements should awaken the attention of the Government for they certainly suggest a desire to avoid applying the laws of the land. But they also indicate that there is good reason for not trusting these petty local bodies with the appointment of such important functionaries as the medical officers of health and the dispensary medical officers.

Then, again, in most other occupations the salary increases, but this is not the case with the dispensary medical officers and no difference is made between junior and senior officers. Thus a dispensary medical officer for a Dublin district told me that he was appointed thirty-five years ago and yet he receives to-day identically the same salary as he did on the first year of his appointment. Indeed he is, if anything, poorer, for money is now cheaper than it was when first he came into office. If, however, the appointments were in the hands of the central authority young men could be sent at first to the less important districts and as they gained in experience they might be promoted to more important and better paid districts. Thus a spirit of emulation would be engendered and there might at last be reasonable hope of seeing the public health laws applied with some show of vigour. Then when there were cases of abuse the dispensary medical officer would not depend on the local authority for redress. Even in Dublin tickets for dispensary medical attendance can be obtained from publicans or their potboys. One medical officer told me that he had to attend the family of a man who was earning £5 a week. Well paid workmen who are able to keep greyhounds for racing purposes also rank among his dispensary patients. It was of no use protesting—these people did not care. They would not even join a benefit society and pay a penny per week for medical aid. The relieving officers also gave tickets and seemed to think that they could not refuse them. Yet theoretically the person who gives a ticket for dispensary medical attendance is supposed to make an inquiry and to assure himself that the patient cannot afford to pay a practitioner's fee or to join a provident dispensary or benefit society. In view of all these facts it is evident that the system of dispensary medical aid is grossly abused, that it works most unsatisfactorily, and that sweeping reforms are urgently needed. The Irish Medical Association has brought this matter forward on several occasions, and though these efforts have met with but little success they must be continued and with even more energy.

BIRMINGHAM.

(FROM OUR OWN CORRESPONDENT.)

The Hospital Sunday Fund.

A MEETING of the committee of the Hospital Sunday Fund was held on Jan. 5th under the presidency of the Lord Mayor (Alderman Beale). The report showed that there was an increase in the total number of places of worship contributing, being 280 as compared with 254 in 1896, when, as now, the collections were given to the General Hospital. The gross receipts for this hospital in 1896 amounted to £4422 1*s.* 10*d.* and this year to £5245 15*s.* 8*d.* The Lord Mayor expressed the hope that the movement might be placed on a basis which would appeal in a broader spirit to the whole of the people and contrasted it with the Hospital Saturday movement. Still, it was satisfactory to know that the number of life governors and annual subscribers had been increased. It was pointed out that the expenditure of the General Hospital for the year ending Dec. 31st was £23,870, and towards that sum the committee had received £17,993, thus leaving a deficiency of £5877. They had received that day £4800, but they could only apply one-third of that sum toward the expenditure of the past year, still leaving a deficit.

Poisoning by Hyssop.

A singular case lately formed the subject of a coroner's inquiry where a pregnant woman made an infusion of a

pennyworth of hyssop after taking which she died. She was stated to have been in bad health and the subject of Bright's disease. It is generally believed that the plants of the order to which this belongs—the Labiatæ—have no deleterious qualities, being carminatives and antispasmodics. However this may be as a rule, the medical witness at the inquest expressed his belief that the hyssop was the cause of the patient's death and the jury adopted his opinion, returning a verdict accordingly.

Electric Light at the Queen's Hospital.

The out-patient hall of the Queen's Hospital had the electric-light service inaugurated on Jan. 6th. An installation of 350 sixteen-candle power incandescent lights was provided and pronounced a great success. In addition, all the medical and surgical officers' rooms, the theatre, the chapel, and the administrative departments are fitted with the same kind of light.

Adulteration of Gin.

At a local police-court on Jan. 3rd a publican was summoned for selling gin two degrees under the proof allowed by the law. The public analyst for Warwick said that he was unable to give the exact percentages of water and alcohol with the quantity of added water. The report of the analyst for the county of Worcester showed that the gin was 33·45 under proof and was therefore over the maximum standard of proof allowed by law. The defence submitted that the certificate should have given the percentages of water and spirit and it was therefore contended that there was no case as the certificate did not comply with that requirement. The case was dismissed.

Jan. 10th.

MANCHESTER.

(FROM OUR OWN CORRESPONDENT.)

The Purification of Gas.

THOUGH gas is so great a convenience that even now with electric lighting on all sides the civilised world would be the worse for its extinction, it must also be said that its impurities render it a great nuisance. In Manchester the large proportion of sulphur in the gas has for a long time been an annoyance and a reproach and it seems as if there were a prospect of its being still further increased. A question was asked at the last meeting of the city council as to what steps, if any, were being taken to reduce the abnormally high proportion of sulphur in the gas delivered, and an ingenuous alderman said that there was no danger of the matter being overlooked. "It had had the serious attention of the gas committee ever since he had been a member." However serious the attention may have been it cannot have been serious enough, for it has not removed the sulphur. And then another alderman, the chairman of the gas committee, rose up in his place and said that after much inquiry they had adopted a different process of carbonisation of coal—"the regenerator process"—which had been extremely satisfactory from an economical point of view, for they got 500 cubic feet more of gas per ton of coal carbonised. "But unfortunately it brought in its train a very considerable increase of sulphur," and as according to the scientific authorities "there was only one mode of purifying the gas from sulphur, and that was by lime, they would have to adopt the lime process." He thought they would be able to get a market for the lime and "that the Ship Canal would be of use in this respect." It is to be hoped that it will not be used to poison the fish at the mouth of the Mersey. It is a pity that the chemists, who are great at the production of sulphuretted hydrogen, cannot find some less cumbrous method of dealing with it.

Northwich and its late Medical Officer of Health.

An occurrence took place at Northwich recently which emphasises the desirability in the interests of justice and fairplay and also of the public weal of delivering medical officers of health from having their tenure of office subject to the caprice or self-interest of local cliques. It is reported in the *Manchester Courier* of Jan. 7th that "a heated discussion took place at the meeting of the Northwich Rural Council yesterday with reference to the discharge of Mr. Garstang, who for three years had occupied the position of medical officer of health of the district." The Local Government Board, having "been asked to sanction the appointment of Mr. Gough wrote for the observations of the authority upon a letter received from Mr. Garstang, in which he said he feared his future prospects might be damaged unless some explanation of the council's last action was afforded." The clerk submitted the draft of a letter saying that there had not been the slightest intention of casting any reflection upon Mr. Garstang. After a warm debate, during which it was urged by several members "that the only reason that could be adduced for the discharge of Mr. Garstang was that he had done his duty too honestly and fearlessly," it was decided that no reasons should be given—which it is quite easy to understand as there seems to have been none to give—"and the simple form of reply was accepted by 14 votes to 8." In far too many places the medical officership of health is robbed of all its value as a safeguard of the public health from its being held at the mercy of those who may consider that a regard for their own supposed interests is a higher, or at all events a stronger, motive than regard for the life or health of their neighbours. It may be hoped that they are not always in the proportion of 14 to 8 over the conscientious members of the rural councils and that sometimes ignorance may be the mainspring of their actions, but however that may be the too frequent result is that if he does his duty the medical officer of health soon receives notice to quit.

Jan. 10th.

SCOTLAND.

(FROM OUR OWN CORRESPONDENTS.)

Opening of the New Wing of the Longmore Hospital for Incurables, Edinburgh.

ON the afternoon of Jan. 5th Her Grace the Duchess of Buccleuch performed the ceremony of opening the new wing of the Longmore Hospital. The Marquis of Lothian presided at the ceremony and in opening the proceedings he gave a short outline of the progress of the institution. The central part of the hospital, which was the first part erected, was opened in 1880. The present east wing was opened in 1891 by the Duke of York and Princess May, at which time a children's ward was established. The directors had been enabled to meet the expense of the present extension by the liberal bequest of Mr. Peter Waddell. The work of the institution had been begun in 1875 with 22 patients; now they had accommodation for 150 patients. Mr. J. A. Wenley, chairman of the house committee, referred to the history of the hospital and to the various legacies and donations which had enabled the directors to carry forward the work of the institution. In addition to the new wing they had a new laundry, a new kitchen, a new chapel and mortuary, and the whole building was now lighted by electric light. The cost of all these improvements had been about £25,000. The working expenditure of the hospital had largely to be met from annual subscriptions and as the amount necessary for keeping it up would now be increased they would have to rely on the generosity of the public to meet this increase. To carry on the new wing they would need about £600 annually in addition to their former revenue. The Duchess of Buccleuch, after speaking for a few minutes, declared the new wing open. Mr. D. M. Westland, on proposing a vote of thanks to the Duchess, presented her with a small key made of Scottish gold. The new wing, two storeys in height with a basement, is attached to the main building by a wide corridor of iron and glass. The ground floor is set apart for phthisical patients, while the upper floor is intended for the reception of cases of cancer. The kitchen premises have been reconstructed and additional rooms have been provided above the kitchen for the nursing staff. The new washing houses and laundries are in a separate building and the drainage has been entirely remodelled, iron pipes having been substituted for fireclay ones. The main drains and connexions are placed in subways so as to be easy of access, and the drainage subway has been utilised to give access to the mortuary buildings which are placed at the Causewayside entrance to the hospital grounds. They consist of a post-mortem room

and mortuary lined to the ceiling with glazed tiles, a chapel, and a specimen room, with a dark room for photographic purposes attached.

The University of Edinburgh: Statistics for the Year 1898.

The total number of matriculated students during the past year was 2813. Of this number 1387 (including 6 women) were enrolled in the Faculty of Medicine. The number of women attending extra-academical lectures with a view to graduation in the University was 89. Of the students of medicine in the University 584, or over 42 per cent., belonged to Scotland; 374, or 27 per cent., came from England or Wales; 94 from Ireland, 60 from India, 231 from British colonies, and 44 from foreign countries. During 1898 the following degrees in medicine had been conferred: M.B., C.M., 60 (including 2 women); M.B., Ch.B., 138 (including 6 women); M.D., 73 (including 1 woman). There had been 29 recipients of the honorary degree of LL.D. during the year, this large number being accounted for by the visit to Edinburgh of the British Medical Association. Among the honorary graduates was Lord Kitchener of Khartoum who had received the degree at a special graduation ceremonial held in November. The total annual value of the university fellowships, scholarships, bursaries, and prizes now amounted to £17,790. Of this £3000 were distributed in the Faculty of Medicine. In addition to the above a sum of upwards of £600, the income of the Earl of Moray Endowment Fund, was annually available for original research.

Extension of the Montrose Asylum.

At the monthly meeting of the managers of the Sunnyside Royal Lunatic Asylum in Montrose on Jan. 3rd the question of extension of the asylum again came up for consideration. Under the new regulations as to the number of cubic feet of air-space for each patient the asylum was at present in the condition of having 124 patients too many. In the report of Dr. Fraser, Commissioner in Lunacy, attention was drawn to the overcrowded state of the asylum. The asylum house committee recommended that in order to reduce the present overcrowding two houses should be erected on the high ground behind the present asylum, each to accommodate from 30 to 50 patients. After discussion the meeting agreed to the recommendation of the committee and instructed them to carry out the "forward policy" with all speed.

The University of Aberdeen.

The Aberdeen Town Council has disapproved of the plans for the "restoration" of old Greyfriars Church, the majority being in favour of demolishing the structure and erecting a new church on another site, as contemplated by the Act of Parliament authorising the extension of the University buildings at Marischal College. Owing to this resolution steps are being taken to put the University in possession of funds to carry on the original extension scheme, it being feared that Mr. C. W. Mitchell, Jesmond Towers, Newcastle-on-Tyne, who offered (at first anonymously) a contribution of £10,000 on the condition of old Greyfriars Church, which is so far a pre-Reformation building, being retained in a "restored" form, may now withdraw the proferred subscription.—The medical and other classes resumed work this week after the Christmas vacation.

Aberdeen Hospital Sunday.

New Year's day was Hospital Sunday in Aberdeen, though several of the church collections were either not made or not completed till Jan. 8th. The collections (from 62 churches) on Jan. 1st alone amounted to £1155 and altogether the Royal Infirmary will receive several hundreds of pounds more than it received last year.

Jan 10th.

IRELAND.

(FROM OUR OWN CORRESPONDENTS.)

The Prevention of Tuberculosis in Dublin.

A LONG letter has recently appeared in the columns of the *Irish Times* from the pen of Professor Antony Roche, lecturer on public health at the Medical School of the Catholic University, referring to the meeting of the National Association for the Prevention of Consumption lately held under the presidency of the Prince of Wales and suggesting that the occasion should have a special interest for the inhabitants of Dublin—a city in which the mortality from tuberculous disease is relatively high, being much higher than that which is shown to exist, for instance, in London. The death-rate it appears from this class of disease has, moreover, continued at a high level in Dublin notwithstanding that it has slowly declined in many other cities and in the country at large. Mr. Roche therefore considers that the metropolis of Ireland is especially in need of remedial measures as regards that department of public health. The isolation of cases of phthisis is a matter of very considerable difficulty and expense, and if we include under that term all the surgical as well as the medical manifestations of tuberculosis it seems absurd to hope that separation or isolation can prove a really practical and effective measure for years to come. The reason of this is to be found of course in the fact that although the disease is distinctly capable of propagation and properly ranks as an infectious disorder it differs from all the other affections so classed in this country in its chronicity, and in the fact that subjects of tuberculous disease are often moving about and attending to their business for years before they finally become invalided. Mr. Roche suggests some measures of a practical character which might be easily and without much expense adopted in Dublin—amongst others the disinfection of houses in which tuberculous patients have died, the inspection of the city meat-supply, the exclusion of dairy-yards from within the city boundary, the treatment of all milch cows with tuberculin in order to ascertain whether they are entirely free from tuberculous disease, &c.

The Dental Hospital of Ireland.

A general meeting of the governors and subscribers of the Dental Hospital of Ireland was held in the new building in Lincoln-place on Jan. 9th to approve of the memorandum and articles of association for the purpose of incorporating the institution under the Companies Acts, 1867, and to nominate members of the Executive Committee to subscribe the memorandum and articles for the purpose of incorporation. Mr. James J. Pollock, J.P., filled the chair and received the names of many influential persons nominated to subscribe the memorandum and articles of association. It appears that when the institution was in York-street it was only a voluntary society without any incorporation and after removal to the new building in Lincoln-place it remained so. The governors now wish to look for some constitutive and legal status so that they may be no longer merely a voluntarily formed body and in order to bring this about they are taking measures to register the hospital as a private company under the Acts of 1867. The effect of this would be that the institution could not be worked for profit but for the public benefit. A resolution approving of the steps taken was passed, the object of the incorporation being to take over the existing hospital as it stands and to carry on there in future the business of the Incorporated Dental Hospital of Ireland.

Prosecution under the Public Health Act.

An important case came on at the Belfast Police Courts on Jan. 3rd when the corporation summoned a woman for permitting a new building to be occupied as a dwelling-house before the house drainage had been completed and the house approved of by the city surveyor as fit for habitation. It would appear that the defendant had passed plans with the corporation for the erection of three houses, these plans showing the drains connected with the sewer. No drains had been made and notwithstanding the warnings of the corporation the woman and her family had gone into occupation of one of the houses. The magistrates entered a nominal penalty of 40*s.* as a company had been bound under agreement with the corporation to make the sewer and the defendant had purchased the ground believing this agreement existed. The company had, however, changed hands and the new owners refused to carry out the covenant.

The Ulster Medical Society.

The monthly meeting of the Ulster Medical Society was held on Jan. 6th in the Museum, Belfast, when Dr. Cecil Shaw read a paper on Post-nasal Growths, giving an account of the etiology, diagnosis, and treatment of these adenoid tumours. Dr. E. C. Bigger and Dr. Robert Campbell read notes of a case of Operation for Perforated Typhoid Ulcer. The patient who was a man was in the Union Hospital under Dr. Bigger and symptoms of perforation occurred about the third week of the disease. The abdomen was opened and a perforated ulcer was discovered in the ilium about

2 ft. from the cæcum through which fæcal matter was passing into the peritoneal cavity. It was carefully closed, but the patient after making a rally died on the fourth day after operation from exhaustion. A post-mortem examination showed that the opening was closed and that the intestine was watertight. An interesting discussion followed the reading of these communications in which Dr. Walton Browne, Professor Sinclair, Dr. A. B. Mitchell, Professor Byers, Dr. Allan, Dr. Killen, Dr. John Campbell, and the President took part. Dr. John Campbell read notes of a case of Removal of Cancer of the Rectum by Kraske's Method and a case of Nephrorrhaphy for Moveable Kidney.

The Public Health Committee, Belfast.

At a meeting of the Public Health Committee of the Belfast Corporation held on Jan. 5th "attention was drawn to the damaging effect the exaggerated and in many cases unfounded statements made in journals of some standing regarding the unsanitary condition of some parts of the city would have if these statements were not contradicted, but being of a general and irresponsible character it was hard to contradict these unless specific information was given by the papers making the charges and the medical superintendent officer was instructed to apply to the editors for this."

The Belfast and District Lunatic Asylum.

At the monthly meeting held on Jan. 9th it was reported that 981 patients were on the asylum register. A statement by the chairman (Professor Cuming, M.D. R.U.I.) showed how curiously the Board of Control in Dublin manage matters. It appeared that a committee of the asylum governors had an interview with the Finance Committee of the Belfast Corporation with reference to the fees of the architect for work done in connexion with the Purdysburn Asylum. At that interview they found, to their astonishment, that while they (the governors) had sanctioned a preliminary payment of £2000 only the Board of Control in Dublin had asked the Finance Committee for £4000. In reply to the corporation the governors could give no explanation of this matter as they knew nothing of it. However, they decided to write to the Board of Control and they then, in reply, wrote withdrawing their request for £4000 and said what they wanted was only £2000 which the governors had voted and £700 for quantities. The governors had decided upon the erection of two blocks and part of an administrative building at £65,000 and it was architect's fees on these the governors sanctioned. The whole matter will probably be left in the hands of the new board which will soon come into being.

County Antrim Asylum.

At a meeting of the governors of the County Antrim Asylum held on Jan. 9th a communication was received from Sir David Harrel expressing the dissatisfaction of the Board of Control with the new asylum works and asking the governors to appoint a committee to meet a committee of the Board of Control with the engineers at the works. A committee was accordingly appointed.

Jan. 11th.

PARIS.

(FROM OUR OWN CORRESPONDENT.)

Waste in the Assistance Publique.—Abuse of Maternity Charities.

THE mortality among women confined in the Paris hospitals was some twenty years ago very high. Thanks to Tarnier whose memory must ever be held in respect puerperal fever has now become exceedingly rare in lying-in hospitals, for the young mothers are surrounded with every possible antiseptic care; and the theories of Pasteur applied to obstetrics by Tarnier and his pupils have saved thousands of lives. But the enormous progress made in this line of practice and the excessive care which is taken have had the result of causing the hospitals to be invaded by a very different class to that for which they were originally intended, and the proportion of midwifery cases undertaken at the expense of the Assistance Publique has increased to an alarming extent. Three-fifths of all the births in Paris are paid for by this association. It is unjust, if not dangerous, to draw upon the income of the Assistance Publique for the benefit of the well-to-do classes. Professor Pierre Budin, a well-known authority in the matter, recently gave a lecture at the Maternité Hospital in which he brought forward the following figures. In 1877 the number of lying-in cases attended by the registered midwives of the Assistance Publique was 3486; in 1896 it had increased to 5876. It was considered that the registered midwife would gradually disappear as the number of hospital beds increased, but this hope has not been realised. The Assistance Publique exercises supervision, not only over its own registered midwives, but also over those attached to the various charitable organisations who attend lying-in women at their own homes, because they either do not wish or are unable to go into hospital to be confined. In 1877 there were 10,680 such cases; in 1896 the figures had risen to 12,025. On adding the totals for 1877 and 1878 it is found that 19,300 cases were attended by the Assistance Publique, while in 1896 the figures rose to 31,987. The numbers have grown very rapidly, especially as regards hospital cases—namely, 14,096. As there are from 50,000 to 55,000 births per annum in Paris it will be easily seen that three-fifths of these happen under the care of the Assistance Publique. The causes of this increase are many and various. First of all the number of maternity beds has doubled. Secondly, patients no longer shun the hospitals as formerly, for knowing the results obtained by antisepsis and good hygiene women flock to the hospitals to obtain that care which they cannot obtain in their own homes. Thirdly, facilities for getting about have largely increased owing to railways and tramcars so that easy access to the hospitals is now at the service, not merely of Parisians, but also of those dwelling in the rest of the Department of the Seine and even of those from more distant departments.

The Brain of Vacher.

Vacher, the well-known vagabond and the author of 18 murders, who had already gained a niche in popular legend under the name of the "shepherd slaughterer," has been guillotined. During the eighteen months of his imprisonment he was the object both before and after his condemnation of numberless medico-legal inquiries and his case gave rise to much scientific controversy. In the opinion of many psychologists he was quite irresponsible. As a fact he always was an odd character, very violent and erotic to the point of disease (*maladivement*). He had been in an asylum, from which, however, after a stay of some months he was discharged as cured Owing to some love trouble he shot himself twice in the head with a revolver. One of the bullets could not be extracted and was the cause of a marked facial paralysis with occasional attacks of acute neuralgia. After leaving the asylum Vacher began his life of wandering, in the course of which he committed 18 murders, in all of which, with the exception of one, the victim was a young boy or girl. They were accompanied with violation or mutilation of the body, evisceration, and removal of the genital organs or the breasts. Vacher declared that the acts were committed under an irresistible impulse and that after their committal he felt the greatest possible relief. Dr. Lacassagne, Professor of Forensic Medicine at the faculty of Lyons, assisted by Dr. Bebatel and other noted psychologists who were deputed to examine Vacher, came to the conclusion after a long and careful examination that he was responsible. Dr. Lacassagne considers that Vacher was simply a clever impostor who was well acquainted with the symptoms of ordinary madness owing to his stay in the asylum and who from the very commencement of his murderous career had counted on the immunity he would receive by pleading madness. The methodical way in which he set about his crimes, the precautions he employed to overcome his victim at once, to cut the throat on the one side while he stood on the other so as to avoid the spout of blood from the carotids, the skill displayed in the hiding of the body and the way in which he removed himself from the danger zone by travelling the most extraordinary distances, sometimes as much as sixty kilometres across country in one night,—all these considerations forced the experts to conclude that Vacher was only shamming. His attitude on trial when he offered the most ingenious defences confirmed this opinion and the jury unanimously condemned him to death. This verdict, however, did not put an end to the scientific discussions on the matter. Dr. Madeuf, the aural surgeon, held that the unextracted bullet which was lodged in the petrous portion of the temporal bone was possibly the cause of

the psychological disorders present in the prisoner, while Dr. Toulouse, of the Villejuif Asylum, maintained that Vacher's ideas were purely those of a maniac. A radiograph of Vacher's head was taken and the position of the bullet carefully gone into. However, as a verdict had been unanimously given of "Guilty and responsible" the President of the Republic refused to interfere. Vacher was accordingly beheaded. The post-mortem examination was made a few minutes after death. Many medical men were present, among whom were Dr. Madeuf and Dr. Robert. On opening the skull nothing abnormal could be seen, there was no adhesion of the meninges, and nothing abnormal even in the temporal region where the bullet had lodged. Dr. Madeuf took the skull and the brain to Paris where the former will be mounted for the school of anthropology. The brain was handed over to Dr. Toulouse who declares that he can trace slight signs of meningeal adhesions. Six sections of the brain were sent to many noted experts among whom was Professor Lombroso. The reports of these gentlemen have not yet been received but the matter still continues to be discussed in the press and many psychologists still hold to the idea that Vacher was irresponsible.

Jan. 11th.

BERLIN.

(FROM OUR OWN CORRESPONDENT.)

Tubercle Bacilli in Butter.

TUBERCLE bacilli have been found in butter by several observers. Dr. Obermüller of the Hygienic Institute in Berlin detected these bacilli in each of fourteen samples obtained from the same tradesman. Dr. Petri of the Imperial Health Office took 102 samples of butter from different shops and found tubercle bacilli in 32·3 per cent. Dr. Hermann and Dr. Morgenroth also of the Hygienic Institute in ten samples of butter from three shops detected tubercle bacilli in 50 per cent. Dr. Lydia Rabinowitsch, however, in 80 specimens did not find tubercle bacilli in any instance. In order to get an explanation of these very divergent results Dr. Lydia Rabinowitsch was asked by Professor Koch to undertake a second series of examinations, the results of which have just been published in a recent number of the *Deutsche Medicinische Wochenschrift*. In May, 1898, fifteen specimens were received from fourteen different shops in Berlin, two of which were found to contain virulent tubercle bacilli. The two samples were supplied by the principal butterman in this city. Induced by this remarkable fact Dr. Lydia Rabinowitsch again examined samples from the same place in June and July and found tubercle bacilli to be present in 70 per cent. In October a third series from the same shop was examined and tubercle bacilli were discovered in every instance. All the animals inoculated with that butter showed the typical symptoms of tuberculosis. For the purpose of control a series of samples was received from another extensive dealer in the butter trade, but in no instance could tubercle bacilli be discovered. It was, moreover, remarkable that of the animals inoculated with butter from the first shop a great many died from peritonitis when the injection was made into the peritoneal cavity, so that this butter obviously contained many more bacteria than the other samples. By these investigations it has been proved that all the butter sold at the principal butter shop in Berlin contained very virulent tubercle bacilli whilst the butter obtained from a good many other shops did not contain tuberculous material at all. Apparently the samples used by the investigators who discovered tubercle bacilli were taken from the same source.

Statistics of the Medical Profession and the Universities.

According to Dr. Schwalbe's Medical Directory the number of medical men in Germany is 25,757. An article in the *Deutsche Medicinische Wochenschrift* states that there has been during 1898 an increase of 884 (3·6 per cent.). Whilst the general population increased by 9·7 per cent. during the ten years 1875-1885 and by 11·6 per cent. during the ten years 1885-1895, the medical profession increased during the same two periods by 15·4 and 46·0 per cent. respectively. As regards the different States of the Empire there were 15,454 medical men in Prussia, 2803 in Bavaria, 1943 in Saxony, 851 in Würtemberg, 1000 in Baden, 651 in Hesse, 767 in Alsace-Lorraine, 544 in Hamburg, and the remainder in the smaller States. In 1876 there were 3·21 medical men for each 10,000 of the population, in 1887 there were 3·60, in 1897 there were 4·75, and in 1898 there were 4·93. In Berlin there were 838 medical men in 1876, 1104 in 1887, and 2233 in 1898; in Munich 316 in 1887 and 579 in 1898, in Breslau 281 and 482, in Dresden 236 and 408, in Leipsic 189 and 408, in Frankfort 151 and 307, in Cologne 158 and 305, in Hanover 131 and 234, in Strassburg 104 and 206 respectively. There is thus an enormous increase, especially in the larger towns, but most of all in Charlottenburg, a suburb of Berlin, where the number of the medical profession, which was 30 in 1887, reached 301 in 1898. Also in the rural districts, some of the poorer parts of the country excepted, the increase of medical practitioners has been much greater than the average increase of the population. There is, therefore, ample reason for feeling some anxiety as to the future of the medical profession, but there seems to be some prospect that the abnormal influx of young men may be diminished. According to returns published in the *Vossische Zeitung* the number of students of all faculties (theological, legal, medical, and philosophical) has increased by 4813 (equal to 14·3 per cent.) within the last four years; the number of medical students, however, which during the period 1886 to 1895 rose from 5177 to 7315 (equal to 40 per cent.), has increased by 5·2 per cent. only within the last four years, being scarcely more than the average augmentation of the general population. In course of time, therefore, the natural decrease of the number of medical men by deaths, &c., will no longer be more than compensated by the crowding of young men into the medical profession. The other faculties however, continue to show an abnormal influx of students, as will appear from the following figures. The number of students for the years 1894 and 1898 respectively were 4821 and 6151 in Berlin, 3543 and 3905 in Munich, 2985 and 3413 in Leipsic, 1479 and 1780 in Bonn, 1370 and 1605 in Halle, 1276 and 1522 in Breslau, 1347 and 1343 in Würzburg, 1165 and 1306 in Tübingen, 805 and 1191 in Göttingen, 1028 and 1142 in Heidelberg, 1136 and 1141 in Freiburg, 780 and 1107 in Marburg, 949 and 1075 in Strassburg, 1131 and 1026 in Erlangen, 742 and 858 in Greifswald. 508 and 858 in Kiel, 691 and 778 in Königsberg, 528 and 717 in Giessen, 635 and 664 in Jena, 408 and 566 in Münster, 420 and 449 in Rostock. Among all the universities only Würzburg and Erlangen show a decrease of students and in these the reduction is but slight. As regards the separate faculties there has been a rather considerable diminution of theological students, for there were 2812 Protestant and 1297 Roman Catholic students in 1898, whilst in 1894 the numbers were 3025 and 1418 respectively. In the faculty of philosophy there were 8324 students in 1894 and 11088 in 1898 and in the faculty of law 9294 students in 1898 and 7315 in 1894. These returns show that the great majority of young men desirous of entering one of the learned professions prefer the faculties of philosophy and law, whilst theology seems to be much less favoured by the present generation and, as stated above, the study of medicine does not attract so many students as in former years.

Calot's Treatment of Spinal Curvature.

Dr. Calot of Berck-sur-Mer, who introduced the *brisement forcé* of spinal curvature, lately visited Berlin and attended a meeting of the Berlin Surgical Society in the Royal surgical clinic. He performed his operation before the society on two children, one being a mild case where the *brisement* could be easily performed; in the other case he made an incision over the spinous processes previously to the application of the plaster-bandage so as to loosen the periosteal covering and thereby get an ample development of osseous tissue. Both children were then "suspended" and the curvature was straightened by manual force. In the published descriptions of the procedure it had the appearance of being somewhat rough, but it was found not to cause any serious inconvenience to the patients.[1] Dr. Calot, who gave his explanations in the French language, was heartily applauded by the spectators.

Jan. 9th.

ROME.

(FROM OUR OWN CORRESPONDENT.)

Mosquitoes and Malaria: Prophylactic Measures.

THE LANCET[1] has already put in evidence the Italian claims to having discovered the connexion of malaria with

[1] THE LANCET, Nov. 12th, 1898, p. 1300, and Nov. 19th, 1898, p. 1371.

mosquitoes and the subject thrashed out in the press, lay as well as professional, may thus be summed up. The first to foreshadow that connexion was the French investigator Laveran (not Bignami, as Italians maintain), while the first to submit Laveran's indication to proof, experimental and clinical, was Bignami, acting under the directions of Professor G. B. Grassi of the University of Rome. That eminent zoologist had put himself to immense pains to study mosquito life and after many days spent in such typical foci of the fever as the Roman Campagna, the Tuscan Maremme, Colico (at the head of Lake Como), Locate Triubzi and the Ferrarese and Venetian districts, his first conclusion was "laddove c'è malaria, ci sono zanzare" (where there is malaria there are mosquitoes). The converse, however, could not be established, for mosquitoes are often a plague in countries where malaria is unknown. His next step was therefore to examine the very numerous species of mosquitoes all classed under one generic name, and by an admirable series of eliminative experiments he arrived at the induction (much more important than the previous one) that: "Nei luoghi malarici, oltre alle specie di zanzare comuni ai luoghi salubri, se ne trovano costantemente altre, le quali mancano assolutamente a questi ultimi" (in malarious localities besides the species of mosquitoes common to healthy districts there are constantly found other mosquitoes which are absolutely wanting in those latter districts). From this step the obvious one was to take the malaria-conveying mosquitoes so differentiated and to experiment with them clinically which was done in Rome (as already stated) by Bignami at the instance and under the direction of Grassi with the results already known. We have now got as far as this—to wit, that "malarial parasites live and reproduce themselves, probably under different forms, in man and in some species of mosquitoes. These insects, sucking the blood of malarious subjects, get infected and puncturing other individuals in turn give these the malady." On the other hand, "it cannot be claimed as proved that the malaria is generated primarily in mosquitoes," while "it is certain that the greater part of the palustral mosquitoes even of the dangerous species are not infected with the fever and are therefore innocuous." Grassi's thesis, in short, resolves itself into this, that certain species of palustral mosquitoes are the only channel of transmission of malaria ("sono l'unica via di trasmissione della malaria"). We have yet to learn much concerning the life and the development of the malarious germs before we can hope successfully to combat disease when already developed or to render the human organism by inoculation proof against its attack. Meanwhile, mosquito curtains, gauze veils, "zampironi" (whose vapour the mosquito cannot withstand), and such like defences will have their use at night—mosquitoes puncturing with difficulty during the day. But, suggests a medical contributor to the *Corriere della Sera* of Milan (which has lately opened its widely-diffused columns to professional correspondents on this theme so interesting to Italians), "why not attack the enemy in his own habitat?" The mosquito, he proceeds to show, reproduces itself in low-lying, stagnant waters which constitute the true "ambiente malarico" (malarious environment). Poison these waters and you thus destroy the larvæ of the mosquito by milliards and render "extremely rare these collectors and disseminators of the disease." In this way "malaria (the term is a misnomer) may be conquered by weapons within the ready resources of science and so vast spaces of Italian territory may be reclaimed to agricultural and industrial life with the concurrent abolition of infinite human suffering and misery." The suggestion is being already taken up and ere long will be put to the test.

Presentation of Morgagni's Bust to St. Thomas's Hospital.

The library hall of the Ospedale Maggiore presented a brilliant appearance yesterday afternoon, among the company being General Ferrero, sometime Italian Ambassador in London; the Syndic of Milan, Signor Vigoni; the Senator Signor Porro; Dr. Soffiantini, President, and Dr. Manzoni and Dr. Palazzi, members of the committee organised to make over to St. Thomas's Hospital the gift of Morgagni's bust; Dr. Grandi, director of the Ospedale Maggiore; Colonel Guastalla, representing the "Consiglio degli Istituti Ospitalieri"; and numerous other notabilities of the city and province. The bust, a very fine work of art in Carrara marble and shortly to start for its destination at the expense of the Italian Government, having been unveiled amid loud applause, Colonel Guastalla, in the absence of the Senator Vigoni from illness, thanked the assembly for its adhesion and presence in the name of the Consiglio degli Istituti Ospitalieri. Dr. Manzoni followed and read the list of names received by the committee in support of the presentation to St. Thomas's Hospital, among them being those of Dr. Achille de Giovanni, Professor of Clinical Medicine in the University of Padua, where Morgagni taught for well-nigh sixty years, and the Syndic of Forlì (the Forum Livii of antiquity) where the great pathological anatomist was born in 1682. Dr. Soffiantini thereafter gave a brief narrative of the inception, progress, and completion of the committee's work and concluded with a brilliant account of the life and labours of Morgagni who has given his name to at least five distinct discoveries in anatomy, who reinforced the science with pupils like Antonio Scarpa, and whose writings even now reward perusal for their grasp of principle, their descriptive power only equalled by that of Sydenham, and their noble Latinity. Like all intellects of such calibre Morgagni's was not limited by his special field of inquiry but expatiated over other regions—witness his fascinating treatise on Cleopatra's mode of death, his annotations on the Roman agricultural writers, his "Emilian Letters" revealing archæological tastes and researches like those of Virchow, and his philological prolusions which made him an authority in matters of style, Italian and Latin. Add to all this a "carattere dolcissimo" (a character of the gentlest or most amiable) and some notion may be formed of the power he wielded in his generation and of the lustre, intellectual and moral, which his death one hundred and twenty-eight years ago leaves still undimmed. The proceedings—honourable to Italian and gratifying to British medicine—terminated shortly before 5 P.M.

Jan. 9th.

NEW YORK.

(FROM OUR OWN CORRESPONDENT.)

Immigration Figures for 1898.

FROM data furnished by the Commissioner-General of Immigration it appears that the total for 1898 was 229,299. The total immigration remains about the same as last year, the beginning of better industrial conditions in this country having been neutralised as far as attracting immigration was concerned by the war with Spain. It is safe to predict a larger return for the year 1899 unless something unusual occurs to prevent it. There has been a marked increase in the number debarred and returned, probably due to a more rigid inspection. Immigration from South-Eastern Europe has increased 5 per cent. in the total, while from North-Western Europe the figures are lower by the same percentage. Denmark and France sent less than 2000 immigrants each, while Greece sent 2330. The largest immigration from any country outside of Europe was from Turkey in Asia (including Arabia and Syria), amounting to 4275. The increase of immigration from South-Eastern Europe and from Asia will probably be more marked in the future. The average money brought is $2 per head more than in 1897 and $7 more than in 1896. There has been an improvement in the illiteracy of European immigrants as compared with last year, except among Italians, but the average illiteracy for all immigrants is slightly more than last year. It is to be noted that the improvement amounts to one-third in the case of North-Western Europe and only about one-tenth in the case of South-Eastern Europe, but this improvement is neutralised by the fact that a larger proportion of all immigrants came from South-Eastern Europe, making the average illiteracy greater than last year.

The Death-rate in the Army during the War.

The Secretary of War makes the following statement in regard to the army. An army of about 250,000 volunteers and recruits for the regulars was called into existence from civil life and including the regular army the total force was 274,717 men. It was organised, armed, and equipped (no supplies being on hand other than those for the regulars) and 50,000 men of this force were transported by land and sea to battlefields in the tropics 10,000 miles apart, where they won their victories without a single defeat and all within the period of 113 days from the declaration of war to the signing of the protocol. This great achievement cannot be credited to any individual, it belongs to

the nation. It was accomplished through the intelligence and patriotism of all who served, from the Commander-in-chief to the private in the ranks. It also speaks volumes for the prompt, patriotic, and intelligent assistance of the people who furnished in so short a time the supplies necessary to prepare this great army for the field. The deaths in the army from May 1st to Oct. 1st, including the killed, those who died from wounds, and those who succumbed to disease, were 2910, the smallest death-rate recorded of any army in history—a remarkable fact when it is considered that over 50,000 of our troops, born and reared in a temperate climate, were campaigning in a tropical zone, subjected to heat and rain almost unprecedented.

The Work of the Life Savers.

The general superintendent of the Life-saving Service in his annual report says that at the close of the last fiscal year the establishment embraced 264 stations—192 on the Atlantic coast, 56 on the lakes, 15 on the Pacific, and one on the Falls of the Ohio at Louisville. The number of disasters to documented vessels within the field of operations of the service was 402 and there were on board 3113 persons, of whom 12 were lost; 663 shipwrecked persons received succour at the stations of the service. The number of vessels totally lost was 59. There were also 365 casualties to small craft, on board of which there were 874 persons, of whom 10 were lost; 56 other persons were rescued who had fallen from wharves, piers, &c., most of whom would have perished except for the aid of the life-saving crews. These crews saved and assisted to save 471 vessels in distress valued with their cargoes at $2,868,655, and rendered assistance of minor importance to 324 vessels besides in distress and also warned from danger by signals of patrolmen 226 vessels. The investigations made into the details of all shipwrecks involving loss of life and the conduct of the life-saving crews at these wrecks show that no life was lost through lack of faithful and intelligent effort on the part of life-saving men who on all occasions proved themselves equal to the requirements of duty. The number of disasters within the scope of the service was much larger than the number in any previous year. The loss of life, however, was only 22, against 53 in the preceding year when the number of disasters was much smaller and was less in proportion to the number of wrecks than ever before. The following is a general summary of the statistics of the service from the introduction of the present system in 1871 to the close of the fiscal year ended June 30th, 1898: number of persons involved, 81,245; number of lives lost, 845; number of persons succoured, 13,876.

The Marine Hospital Service.

With the close of the fiscal year 1898 the United States Marine Hospital Service completed the one hundredth year of its existence, the original Act for the Relief of Sick and Disabled Seamen having been passed by Congress on July 16th, 1798. At the present time the *personnel* of the service is as follows: Commissioned medical officers, 75, including the surgeon-general, 21 surgeons, 27 passed assistant surgeons, and 26 assistant surgeons. There are, in addition, 136 non-commissioned officers—viz., acting assistant surgeons, 98; sanitary inspectors, 4; and hospital stewards, 34. When all the stations have their full complement of attendants and quarantine employés there are in addition about 400 men employed in this branch of the Government. This number is of necessity much increased during epidemics. There are 21 hospitals owned and worked by the service and 11 quarantine stations; but in addition to these there are 88 localities in the United States where patients of the service receive dispensary and hospital treatment. During the fiscal year 1898 the total number of beneficiaries of the service treated at dispensaries and hospitals was 52,709, and of this number 11,914 were hospital patients. To assist in the prevention of the introduction of contagious diseases into the United States sanitary inspectors have been stationed at Habana, Santiago de Cuba, Rio de Janeiro, and at Yokohama. Two skilled bacteriologists of the Marine Hospital Service were especially detailed to investigate in Habana the cause of yellow fever. A laboratory was established and they continued their labours till obliged to withdraw on account of the war. They have now returned to Habana and are continuing the investigation and their preliminary report, published in the annual report of the service, indicates that the true cause of the disease has been found by Professor Sanarelli in the bacillus icteroides.

Dec. 13th, 1898.

AUSTRALIA.

(FROM OUR OWN CORRESPONDENT.)

The Public Health of Sydney.

THE quarterly report of the medical adviser to the Sydney Board of Water-Supply and Sewerage showed that a slight increase had occurred in the death-rate owing to the epidemic of measles. In zymotic diseases the death-rate had risen from 1·6 per 1000 at the end of June to 5 per 1000 at the end of August, but fell in September to 1·5. The death-rate from respiratory disorders also had increased. More cases of diphtheria had occurred and the number of cases of typhoid fever was double that for the corresponding period last year. This may be partly accounted for by the fact that notification was not compulsory until this year. An analysis of the sanitary conditions existing in cases of typhoid fever is suggestive of the value of the sewerage system. In 33 out of the 68 cases no sewers were available and in 19 the houses were insanitary. In 14 cases the regulations were complied with, but 9 of the patients were school-children. The report emphasised the improvement in the public health which had followed the installation of the sewerage system and stated further that the men working in the sewers invariably enjoyed good health. The mean temperature during the quarter had been lower than the average and the temperature had also shown marked fluctuations, ranging from 40·4° F. in July to 89·8° in September. The sudden changes in the temperature are held responsible for an increase in the deaths from phthisis.

The Melbourne Hospital.

The annual expenditure of the Melbourne Hospital now amounts to £25,953. Three years ago it was £22,500. The receipts, on the other hand, have diminished from £25,700 in 1896 to £20,645. The increased expenditure affects all items except that for printing and is partly accounted for by the fact that the daily average of patients has increased from 271 in 1896 to 295 in the present year and by the great increase in the number of operations. The largest item of expenditure is for wages—£5912 paid to 179 employés. The sub-committee appointed to consider the best way of reducing the expenditure and increasing the income has presented a report. It is advised that the contract system be extended to every department, including the supply of bread and repairs to buildings. Waste is to be prevented by a system of fines on all employés found guilty of waste. The diets are to be more closely supervised by the medical superintendent. With a view of augmenting the income it is proposed to charge a registration fee to all patients, in- as well as out-door; visitors to patients are to be charged 6*d.* a ticket of admission; students are to pay annual fees in addition to the entrance fees; municipal bodies, country as well as urban, are to be asked to contribute to the funds; and the collecting staff is to be reorganised.—The present system of electing the honorary staff of the Melbourne Hospital by the subscribers to the institution has frequently been condemned. A public meeting was recently held to discuss the question. It was convened by the Charity Organisation Society and Professor G. E. Morris occupied the chair. He said that the present system was degrading to the noble profession of medicine. It wholly failed to secure the best men for the position and was quite out of date. He advocated the formation of an election committee consisting of 4 representatives appointed by the governor in council, 4 elected by the medical profession, 2 by the faculty of medicine of the Melbourne University, and 5 by the committee of the hospital. It was finally resolved that it was desirable that no annual subscriber to a metropolitan hospital should be permitted to exercise the right of voting at any election of the medical or surgical staff unless his or her name should have been on the list of subscribers for three years immediately preceding such election and that it was desirable to extend the term of service of the members of the staff from four years to seven.

Prince Alfred Hospital, Sydney.

It has been decided that the lecturer in pathology at the Sydney University shall act as honorary pathologist at the Prince Alfred Hospital and that a resident pathologist be appointed to act under his guidance. Mr. Sinclair Gillies, M.A., M.D., has been appointed honorary assistant physician. Mr. J. L. Wassell, M.B., resident registrar; Mr. J.

MacPherson, M.A., B.Sc., M.B., resident pathologist; and Mr. W. B. Walton, M.B., resident medical officer.

Obituary.

A long-established and well-known medical practitioner has been lost to the profession in Melbourne by the death of Mr. Stephen J. Burke, M.R.C.S. Eng. He arrived in the colony in 1854, having been previously in the navy as surgeon on H.M.S. *Cordelia* and in active service in the Crimean War. He was a universally respected and loved practitioner, always kind and helpful to others, and his acts of charity to the sick poor made his name a household word in his district.—Another much-to-be-regretted death in the profession in Melbourne is that of Miss Amy Castilla, M.B. She was one of the pioneers among the women doctors in Melbourne and the first to hold the position of resident medical officer at a general hospital in Australia—namely, at St. Vincent's Hospital, Melbourne. Subsequently she filled a similar position at the Women's Hospital. She then commenced private practice and was on the staff of the Queen Victoria Women's Hospital in the progress of which she took the greatest interest.

Dec. 2nd, 1898.

Obituary.

SURGEON-GENERAL SIR JAMES MOUAT, K.C.B., V.C., F.R.C.S. ENG.,

HONORARY SURGEON TO THE QUEEN.

THE veterans who took part in the Crimean War are fast passing away. We regret to record the death of Surgeon-General Sir James Mouat, V.C., on Jan. 4th at his residence in Palace Gardens-terrace, Kensington. Sir James Mouat had reached the ripe age of eighty-three years and had retired from the service many years ago—in 1876—but he had a long and distinguished career, as his record of military service shows, and played a notable part in his time. He was essentially a man of action, endowed with much physical and mental energy as well as courage. These enabled him not only to go through a good deal of arduous and responsible work and to play a prominent part in the campaigns at which he was present, but carried him on to old age in the enjoyment of life with his active habits comparatively unimpaired until nearly the end. In the Crimea he displayed great energy in the field and in the official performance of his medical duties. There are probably some still living who can remember him mounted on a horse with high forward action as he rode from camp to camp holding medical boards, making inspections, and giving directions in connexion with the field medical arrangements and the disposal of the sick and wounded and invalids. It was at Balaclava that he won his Victoria Cross. He was the son of Dr. James Mouat of the 13th and 15th Light Dragoons and was born in 1815 and educated at University College and in Paris. He entered the medical department of the army in 1838, was promoted surgeon in 1848, surgeon-major in 1855, deputy surgeon-general in 1858, surgeon-general in 1864, and retired on half-pay in 1876. The regimental medical system was, of course, in force during his service in the army. He served in the Eastern Campaign of 1854–55 with the 6th Dragoons and on the medical staff and was in medical charge of the general field hospital of the 3rd Division throughout the siege operations until the fall of Sebastopol, and subsequently as principal medical officer of Balaclava until the final evacuation of the Crimea on June 12th, 1856, having been present at the battles of Balaclava, Inkerman, and Tchernaya, and the night reconnaissance and attack on Russian outposts on Feb. 19th, 1855, receiving the C.B., the Victoria Cross, the medal with three clasps, and Turkish medal, and being appointed a Knight of the Legion of Honour. He was awarded the Victoria Cross for having voluntarily proceeded to the assistance of Lieutenant-Colonel Morris, 17th Lancers, who was lying dangerously wounded in an exposed situation after the retreat of the light cavalry at the battle of Balaclava on Oct. 25th, 1854, and having dressed that officer's wounds in the presence of the enemy. He served during the New Zealand War of 1860–61 throughout the operations under General Pratt, being twice mentioned in despatches. He was present in the field as Principal Medical Officer throughout the operations in the Waikatoo, Taranaki, and Tauranga districts in 1863–65 under Sir D. Cameron and was repeatedly mentioned in despatches (medal). He received the thanks of the New Zealand Government for "special and valuable services rendered to the colony." In 1858 he was appointed Deputy Inspector-General and in 1864 Inspector-General of Hospitals. In 1868 he was made an honorary surgeon to Her Majesty the Queen and in 1894 was created K.C.B.

ALFRED KEBBELL, M.R.C.S. ENG.

MR. KEBBELL of Flaxton, near York, who died at his residence there on Dec. 21st, had an extensive practice in that district and the surrounding country. He was a native of London and studied medicine at the London Hospital where he gained a surgical scholarship and held the office of house surgeon. Having become qualified as M.R.C.S. Eng. in 1872 he was in the following year selected to be house surgeon in the York County Hospital, an appointment which he resigned after a year's tenure in order to commence practice in Flaxton where the remainder of his life was passed. Mr. Kebbell was a fellow or the Obstetrical Society of London and a member of the York Medical Society. Several contributions by him have appeared in THE LANCET, perhaps the most important being the description of a case of recovery after compound comminuted fracture of the skull with laceration and escape of brain matter, published in our columns on Jan. 1st, 1876, followed on August 5th of the same year by an account of a case in which a girl, aged thirteen and a half years, was delivered of a living child at full term. The deceased was medical officer of the Fourth District of the York Union and medical officer of the Whitwell Convalescent Home. He was aged fifty-one years at the time of his death and has left a widow and family for whom much sympathy is felt.

ROBERT FENDICK, M.R.C.S. ENG., L.S.A. LOND.

MR. ROBERT FENDICK died at his residence, Pembroke House, Whiteladies-road, Clifton, Bristol, on Jan. 5th, in his eighty-third year. Mr. Fendick received his medical education at the Bristol School of Medicine and qualified as M.R.C.S. Eng. in 1859, having taken the L.S.A. Lond. four years previously. He shortly afterwards commenced practice in Bristol and was for many years a Poor-law medical officer, being also registrar of births and deaths for one of the districts. On his retirement a few years ago he was granted a superannuation allowance by the guardians. During the cholera epidemic in Bristol which occurred about fifty years ago Mr. Fendick, who was a member of the Cholera Committee, rendered conspicuous service. Mr. Fendick was for many years churchwarden of All Saints' Church. He was also an active Freemason and on the occasion of his masonic jubilee in 1894 was presented with a handsome address. The deceased who was well known and highly respected was one of the oldest practitioners in the West of England.

PHILIP BROWN, M.D. ABERD.

DR. PHILIP BROWN of Blaydon-on-Tyne died at his residence near Wylam on Nov. 20th after an illness of several weeks' duration. The deceased gentleman who was in his seventy-eighth year was born at Bishop Auckland, received his professional education at the Durham University College of Medicine in Newcastle and at University College, and became qualified as L.S.A. in 1844. Soon afterwards he settled at Blaydon and before long had a very large practice. One of his patients was the late Mr. W. J. Linton, the artist and wood engraver, who in his published memoirs testified to Dr. Brown's ability and kindness. In 1852 Mr. Brown graduated as M.D. at Aberdeen University. He was an energetic member of the Blaydon and Winlaton Mechanics' Institution, frequently lectured to the members, and was a constant and very popular speaker at the annual gatherings. The last time the Northern Union of Mechanics' Institutions met at Blaydon he was chosen President in which capacity he delivered an admirable address. Dr. Brown was medical officer of health of the Blaydon and Ryton Urban Districts and afterwards of the Blaydon Urban District Council. On May 16th, 1883, he was presented with a purse of gold and his portrait painted

in oil, a gold necklace being at the same time given to Mrs. Brown. He has left several sons, one of whom is a member of his father's profession.

JOHN McCOMBIE, M.B. ABERD.

ON Dec. 23rd Dr. John McCombie died at his residence in King-street, Aberdeen, in his forty-third year. He was a native of Morayshire and after having spent some years in business in Glasgow he commenced the study of medicine in Aberdeen University, took the degree of M.B. in 1883, and shortly afterwards commenced practice in Aberdeen. He was greatly interested in anthropology and on the occasion of the opening of the Mitchell Hall he lent the university a collection which was highly commended.

DEATHS OF EMINENT FOREIGN MEDICAL MEN.—The deaths of the following eminent foreign medical men are announced:—Dr. Haan, medical officer of the Havre hospitals.—Dr. Witold-Narkiewicz-Jodko, formerly Professor of Ophthalmology in the University of Warsaw.—Professor Laboulbène, formerly President of the Paris Academy of Medicine.—Dr. Oscar Bulhöes, Professor of Clinical Surgery in the University of Rio de Janeiro.—Dr. Boëns, a Belgian medical man who had for many years identified himself with the agitation against vaccination.—Dr. Gottlieb Gluge, Emeritus Professor of Physiology and Anatomy in the University of Brussels, has died at Nice, aged eighty-six years, having been born in Westphalia in 1812. While a student in Berlin he worked with Froriep who was prosector at the Charité and discovered the oil globules in cells undergoing fatty degeneration. After a period of study in Paris he published an important paper on Influenza treated Historically and Pathologically, for which he was awarded a prize by the Berlin Medical Faculty. In 1838 he was appointed Professor of Physiology in Brussels. His "Atlas of Pathological Anatomy" appeared in parts from 1843 to 1850. For the last twenty-three years he had been living in retirement.—Dr. Constantin Vousakis, Professor of Physiology in the University of Athens.

Medical News.

EXAMINING BOARD IN ENGLAND BY THE ROYAL COLLEGES OF PHYSICIANS AND SURGEONS.—The following gentlemen passed the Second Examination of the Board in the subjects indicated at meetings of the Examiners:—

Monday, Jan. 9th:

Anatomy and Physiology.—Archibald Douglas Hamilton, University College, Liverpool; Henry Shemeld Tumber and Henry Gardner, Firth College, Sheffield; Randolph Henry Nellson Rutherford, Frederick Henry Rudge, and Frank Parlett, University College, Bristol; William L'Estrange Mathews, William Edward Vaughan Lewis, and Justin James Bekenn, Mason University College, Birmingham; Austin Lewis Badcock, Charing-cross Hospital; James Douglas Judson, Owens College, Manchester; Henry Edward Barrett and Hugh George Stiles Webb, St. Mary's Hospital; Thomas Benhote Henderson, Oxford University and St. Thomas's Hospital; William Bartholomew Vaile, London Hospital; and Herbert Michael Henry Melhuish, St. Bartholomew's Hospital.

Physiology only.—Mr. Roderick McKenzie Skinner, Edinburgh University and Medical School.

19 gentlemen were referred to their professional studies for three months in both subjects and one in anatomy only.

Tuesday, Jan. 10th:

Anatomy and Physiology.—Charles Stuart Woodwark and Aubrey Keatinge Halliday Pollock, St. Bartholomew's Hospital; William Vincent Wood, Cambridge University and St. Bartholomew's Hospital; Lorimer Gifford Nash and Arthur William Gater, Guy's Hospital; Arthur Charles Nash, Guy's Hospital and Mr. Cooke's School of Anatomy and Physiology; Ernest Alfred Cox and James Duncan Clay, King's College, London; Charles Ernest Lakin and Robert Robinson Lewis, Middlesex Hospital; Charles Russ Hugh Cameron Wilson, and Ernest Edward Argles, St. Mary's Hospital; Edward Prall, Arthur Whitehead-Smith and Bertram Eli Sansom, St. Thomas's Hospital; William Ashley Beet, Charles Bramhall, William Harrington Gray, Gilbert Phillip Moscrop, and Robert Martin Dolbey, London Hospital; Dhaupat Rai, Punjab University, Lahore; Cecil Hugh Myddelton Hughes, Westminster Hospital; and Frederick James Lawson, University College Hospital.

12 gentlemen were referred to their professional studies for three months in both subjects.

SOCIETY OF APOTHECARIES OF LONDON.—At the Primary Examination held in January the following candidates passed in the subjects indicated:—

PART I.

Biology.—L. Denny, Royal Free Hospital; I. Griffith, London Hospital and Cambridge; D. A. Stepney and M. L. Tyler, Royal Free Hospital; and J. S. Ward, Sheffield.

Chemistry.—St. C. G. Ballenden, Birmingham; J. M. Gleeson, Dublin and London Hospital; W. J. H. Hepworth, Edinburgh and St. Mary's Hospital; H. M. Huggins, St. Bartholomew's Hospital; J. Jones, Manchester; F. Marriott, Edinburgh; and G. B. Messenger, Liverpool.

Materia Medica and Pharmacy.—J. H. Bennett, Birmingham; R. V. Cowey, Edinburgh and St. Mary's Hospital; A. M. Davis, Birmingham; R. J. Hogan; J. Jones, Manchester; F. Marriott, Edinburgh; and H. E. Weston, St. George's Hospital.

PART II.

Anatomy.—J. C. Baggs, St. Thomas's and Westminster Hospitals; J. C. O. Bradbury, Cambridge; H. B. Connell, Birmingham; A. B. Edwards, St. Bartholomew's Hospital; A. T. Greenhill, Durham; R. J. Hanbury, St. Bartholomew's Hospital; A. E. Henton and W. J. H. Hepworth, Edinburgh and St. Mary's Hospital; F. P. Joscelyne, Leeds; G. J. W. Keigwin, London Hospital; N. Lipscomb and H. Mills, St. Bartholomew's Hospital; E. Osborne and J. R. Pooler, Birmingham; A. F. Reardon, St. Thomas's Hospital; H. H. Serpell, St. Bartholomew's Hospital; H. G. Sewell, London Hospital; G. E. Soltau, Royal Free Hospital; H. O. Sutcliffe, Cambridge; P. L. Vawdrey, St. Bartholomew's Hospital; and J. Willett, Glasgow.

Physiology.—J. C. O. Bradbury, Cambridge; P. C. Burgess, Middlesex Hospital; H. B. Connell, Birmingham; W. H. Cotton, Dublin; W. E. Cuthbertson, Bristol and Glasgow; A. T. Greenhill, Durham; R. J. Hanbury, St. Bartholomew's Hospital; A. E. Henton, Edinburgh and St. Mary's Hospital; E. Osborne and J. R. Pooler, Birmingham; H. G. Sewell, London Hospital; G. E. Soltau, Royal Free Hospital; P. L. Vawdrey, St. Bartholomew's Hospital; and J. Willett, Glasgow.

UNIVERSITY OF LONDON.—At the B.S. examination for honours the following candidates were successful:—

Surgery.—First Class: John Preston Maxwell (Gold Medal), St. Bartholomew's Hospital. Second Class: Thomas Varley Cunliffe, Owens College and Manchester Royal Infirmary; and Donald John Munro, Guy's Hospital. Third Class: Winifred Secretan Patch, B.Sc., Royal Free Hospital and London School of Medicine.

FOREIGN UNIVERSITY INTELLIGENCE.—*Baltimore:* Dr. J. Williams Lord has been appointed Professor of Dermatology in succession to Dr. Gilchrist, resigned.—*Berlin:* There are this winter session more students in the medical faculty than there have ever been before, the number being 1311.—*Bologna:* Dr. G. Valenti of Catania has been appointed to the chair of Anatomy.—*Erlangen:* Dr. L. R. Müller has been recognised as *privat-docent* in Medicine.—*Genoa:* Dr. Novaro of Bologna has been appointed Extraordinary Professor of Clinical Surgery in succession to the late Dr. Caselli.—*Halle:* Dr. E. Mehnert of Strasburg has been appointed Extraordinary Professor of Anatomy.—*Kiel:* Dr. Heermann has been recognised as *privat-docent* of Otology.—*Nancy:* Dr. Weiss has been appointed Professor of Clinical Surgery.—*Zürich:* Dr. Max von Frey of Leipsic has been appointed to the chair of Physiology.

UNIVERSITY OF CAMBRIDGE.—Dr. Hill, Master of Downing College and Vice-Chancellor of the University, has been reappointed University Lecturer in Advanced Human Anatomy until Michaelmas, 1903.

WE are informed that the "Antikamnia Chemical Company" have complained to the authors of the Extra Pharmacopœia of the publication of the paragraph therein regarding Antikamnia and that the authors have withdrawn it as being incorrect.

CORPORATE AND MEDICAL REFORM ASSOCIATION.—The Corporate and Medical Reform Association, Limited, 2, Southampton-street, Strand, has prepared a memorial to the General Medical Council praying for the restraint of "illegal certificates of proficiency in departments of medicine, surgery, or midwifery on less than that full medical education which the law requires as necessary for the public safety." A memorial on the same subject was presented to the Council on the concluding day of last session, whereupon Mr. George Brown moved and Mr. Victor Horsley seconded the appointment of a special committee to examine the question. The motion was supported by Dr. Glover, Dr. William Bruce, Sir William Thomson (a unanimous vote of the Direct Representatives), Sir Christopher Nixon, Dr. E. Bennett, and Mr. Tichborne; but an amendment, moved by Dr. MacAlister, that the memorial be referred to the Executive Committee was carried by a majority of 5—a method of disposing of the memorial

which the association considers to be not the most advantageous. The object of the second memorial, to which signatures are now invited, is to strengthen the hands of the Direct Representatives and their friends on the Council. The certificates specially named by the association in the memorial are: (1) "every certificate of proficiency in any class of midwifery except those certificates which admit to the Medical Register"; and (2) the certificates granted to makers and vendors of spectacles by the Spectaclemakers' Company and the British Optical Association.

THE VESTRY OF ST. GEORGE-THE-MARTYR, SOUTHWARK, AND THE SUPPLY OF DIPHTHERIA ANTITOXIN.—On Jan. 11th, 1898, this vestry in accordance with a recommendation of its Public Health and Sewers Committee resolved that a supply of diphtheria antitoxin should be kept for the use of medical practitioners in the event of the hospitals of the Metropolitan Asylums Board being full. This provision of antitoxin by a public body is an excellent and enlightened policy and one which has already been adopted by several local authorities, but a retrograde spirit seems now to have taken possession of the above-mentioned committee, for at the meeting of the vestry on Dec. 13th, 1898, it was moved on behalf of the committee that the resolution of Jan. 11th should be rescinded on the ground that antitoxin "should be injected only by medical men who have a thorough and continuing practical knowledge of the use and effects of the serum—namely, the medical staff of the Asylums Board." Dr. F. J. Waldo, the medical officer of health, pointed out to the vestry that the antitoxin treatment was no longer on its trial but was adopted by medical men in all countries. The experience of the Asylums Board hospitals was that a notable decrease in the mortality had followed its introduction about the year 1895. Its success was especially marked in post-scarlatinal diphtheria, most probably on account of the patients being brought under treatment at an early stage of the disease. Great advantages are to be expected from its use in private practice, for the delay caused by waiting for vacant beds at hospitals adds to the death-rate. Two vestrymen said that nothing ought to be done which would tend to the poor being treated at home instead of at the hospital. In the result the consideration of the matter was adjourned for six months.

PRESENTATIONS TO MEDICAL MEN.—The esteem in which Mr. C. P. O'Connor, M.D. Durh., of March, Cambs, is held among his numerous patients was still further emphasised on Dec. 16th, 1898, when he was the recipient of a silver salver, beautifully engraved, subscribed for by no less than 276 employés engaged on the Great Eastern Railway at March. The salver bears the following inscription: "Presented to Dr. C. P. O'Connor by the railway men at March and Whitemoor on the occasion of his marriage, Oct. 21st, 1898."—On Dec. 20th, 1898, at the annual distribution of certificates to the successful candidates in the local St. John Ambulance Classes at Loughboro', Leicestershire, the Mayor of the borough presided, and on behalf of the female class presented Mr. P. Phelps, L.R.C.P. Edin., M.R.C.S. Eng., of Loughboro', with a silver-mounted walking stick, suitably engraved, and a similar walking stick was handed to Mr. J. B. Pike, L.R.C.P. Edin., M.R.C.S. Eng., from the male class, both as tokens of thanks for their instructions on First Aid.—On Dec. 23rd, 1898, the annual conversazione and presentation of certificates and medallions of the Rutherglen Ambulance Class took place in the lesser town-hall. Provost Edmiston occupied the chair and on presenting in the course of the evening Mr. R. Clarke, M.B. Glasg., of Rutherglen, the lecturer, with a handsome oak escritoire referred to the great success which had attended the year's class, which was a record one in its history.—At the monthly meeting of the Visiting Committee of the Plymouth Borough Asylum at Blackadon on Dec. 28th Mr. Arthur N. Davis, L.R.C.P. & S. Edin., the medical superintendent, who is about to leave for the Devon County Asylum, was presented by the Mayor on behalf of the committee with a framed and illuminated address on vellum in which was set forth their appreciation of the services of Mr. Davis in his management of the institution during the past seven years.—At the annual supper of the officers and staff of the Plymouth Borough Asylum held on Jan. 2nd the superintendent-elect of the institution presented Mr. Davis with an engraved electro-plated soup tureen and entrée dish bearing the following inscription: "Presented to Dr. Arthur N. Davis, by the officers and staff of the Plymouth Borough Asylum as a token of their esteem on the occasion of his appointment as medical superintendent of the Devon County Asylum."

A GENERAL meeting was held on Thursday afternoon of the East Suburban Medical Protection and Medico-Ethical Society, Limited, at which an annual report of considerable interest was presented by the officers of the society.

UNQUALIFIED PRACTICE IN DEVONSHIRE.—At an inquest held at Modbury, Devonshire, on Jan. 6th relative to the death of a quarryman, aged fifty-nine years, it was stated that the deceased paid £2 10*s.* to a man named Roberts of Plymouth who advertised that he could "cure cancer and diabetes" and in return he received twenty-two powders which on analysis were found to consist of table salt. Death was due to diabetic coma.

HEALTH OF BRISTOL.—Dr. D. S. Davies (the medical officer of health) reported at the meeting of the Bristol Health Committee held on Jan. 3rd that the annual death-rate for 1898 was 17·1 per 1000 which is the same as that recorded for 1897 and compared favourably with the ten years' average which is 18·4 per 1000. The birth-rate was 28·5 per 1000, the ten years' average being 29·4 per 1000. The death-rate from zymotic diseases during 1898 was 2·68 per 1000.

THE POLICE AND VACCINATION.—At the last meeting of the Cornwall Standing Joint Committee a member drew attention to the fact that some of the police made conscientious objections to vaccination; he also inquired whether police constables were vaccinated. The chief constable replied that he had heard of no police-officer making objections to vaccination and added that there was no compulsion for the members of the force themselves to be vaccinated. Another member stated that four or five policeman had applied for exemption in his district.

LITERARY INTELLIGENCE.—According to *Le Scalpel* there has just been a considerable mortality amongst French medical journals, *La Revue des Sciences Médicales de Hayem*, *Le Journal des Connaissances Médicales* (which has existed for fifty-six years and has of late been edited by Professor Cornil and Dr. Galippe), and *Le Journal des Maladies Nerveuses* of Paris having ceased to appear.—Messrs. Kegan Paul and Co. will have ready by the middle of January a new and entirely revised edition of Mr. E. A. Reynold-Ball's "Mediterranean Winter Resorts."

FREEMASONRY.—*The Rahere Lodge, No. 2546.* An ordinary meeting of this Lodge was held at Frascati's Restaurant, Oxford-street, W., on Tuesday, Jan. 10th, 1899, Bro. Burns, the W.M., in the chair. Messrs. F. H. Lewis, W. W. Kennedy, and T. Hood were initiated into freemasonry and Bro. J. A. Rigge was elected a joining member of the Lodge. Bro. Dr. Roberts was admitted to the second degree and Bros. Coventon, Griffiths, and Gay to the third degree. A sum of 20 guineas was voted from the funds of the Lodge in aid of the Royal Medical Benevolent College, Epsom, and 1 guinea was given to the Home for the Dying. The brethren and their guests afterwards dined together.

COMPLIMENTARY FAREWELL DINNER. — On Dec. 15th, 1898, Mr. J. J. F. Bourke, L.R.C.P. & S. Irel., of Rathgar, Dublin, was entertained at a farewell and complimentary dinner by some of his colleagues of the Richmond and Temple-street Hospital and by some personal friends. In both those institutions Mr. Bourke became very popular and those who had worked with him availed themselves of the opportunity which his leaving to take up an important appointment in Australia afforded to pay him some mark of esteem and appreciation. Dr. T. Myles presided and in proposing the health and success of the guest of the evening expressed the regret of all present at the loss which they must sustain by Mr. Bourke's departure.

A NEW MORTUARY AT HAMMERSMITH.—A new mortuary and coroner's offices were recently opened at Fulham Palace-road. The accommodation in the front block provides for the court, lobby and entrance, waiting-room, coroner's room, lavatories and closet accommodation on the ground floor, with caretaker's rooms above the waiting- and

coroner's rooms; there is a 10 ft. passage entrance and exit at each end leading to the open yard 20 ft. wide. The mortuaries are on the east side of the open yard and consist of No. 1, ordinary mortuary, and No. 2, mortuary for infectious cases, separated by a lobby. Adjoining the No. 1 mortuary is the post-mortem room, and close by is the laboratory. A wash-house is situated at the north end of the block, and a shell-house and disinfecting house at the other end. The general plan has been arranged to keep the various buildings separate, with sufficient air space between each. The coroner, jury, and witnesses and other persons wishing to see the bodies can do so from the viewing lobby. The court is in the front of the building and measures 20 ft. by 30 ft.

Appointments.

Successful applicants for Vacancies, Secretaries of Public Institutions, and others possessing information suitable for this column, are invited to forward it to THE LANCET *Office, directed to the Sub-Editor, not later than 9 o'clock on the Thursday morning of each week, for publication in the next number.*

BENSON, FRANCIS ALOYSIUS, L.R.C.S., L.R.C.P. Irel., has been appointed Public Vaccinator for the Ormesby District of the Middlesbrough Union.

BROWN, RICHD., M.B. Durh., B.S., has been appointed Medical Officer by the Blaydon District Council, vice P. Brown.

COOPER, C. W., M.B., M.R.C.P. Lond., has been appointed Honorary Consulting Physician to the Leicester Infirmary.

DAVIES, A. O., M.R.C.S., L.R.C.P. & S. Edin., has been appointed Medical Referee under the Workmen's Compensation Act for the Aberystwith, Machynlleth, and Dolgelly districts.

DAWNAY, A. H. PAYAN, M.R.C.S., L.R.C.P. Lond., has been appointed Anæsthetist to the Royal Orthopædic Hospital.

GARRETT, J. H., M.D. Durh., D.P.H. Camb., has been re-appointed Medical Officer of Health for the Borough of Cheltenham.

GRAY, SARAH, L.R.C.P., L.R.C.S. Edin., L.F.P. & S. Glasg., has been appointed Assistant Surgeon for the Nottingham Hospital for Women.

GREENWOOD, FRANK R., M.R.C.S., L.R.C.P. Lond., has been appointed Resident Surgical Officer for the Birmingham and Midland Free Hospital for Sick Children.

GUNTHER, T., M.D. Tubingen, L.R.C.P. Lond., has been re-appointed Medical Officer of Health by the Hampton Wick Urban District Council.

KNOX, J. R., M.B., C.M. Edin., has been appointed Medical Officer for the Molesey Sanitary District of the Kingston Union.

MORRISON, D. S., M.B., C.M. Edin., has been appointed Medical Officer for the Liff Landward District by the Dundee Parish Council.

OSBORNE, O., L.R.C.P. Lond., M.R.C.S., has been appointed Medical Officer of Health by the Bexhill Urban District Council.

PECK, H., M.B. Edin., L.R.C.P., L.R.C.S., D.P.H. Camb., has been appointed Medical Officer of Health for the Chesterfield Rural District, vice A. Mackintosh.

PRATT, REGINALD, M.D. Lond., M.R.C.S., has been appointed an Honorary Physician to the Leicester Infirmary, vice C. W. Cooper, resigned.

PUGH, ROBT., M.B., Ch.B. Edin., has been appointed Junior Assistant Medical Officer for the City Asylum, Birmingham.

ROSS, J. S., M.B., Ch.B. Vict., has been appointed House Surgeon and Resident Obstetric Assistant Surgeon for the St. Mary's Hospital, Manchester, vice W. K. Walls.

ROWLAND, J. T., M.D. St. And., M.R.C.S., has been re-appointed Medical Officer of Health by the Richmond Urban District Council.

SEVESTRE, R., M.D. Camb., L.R.C.P. Lond., M.R.C.P., has been appointed an Assistant Honorary Physician to the Leicester Infirmary.

SMITH, C. C., M.B. Camb., M.R.C.S., has been appointed Medical Officer for the Redditch Sanitary District of the Bromsgrove Union.

THOMSON, H. CAMPBELL, M.D. Lond., M.R.C.S., has been appointed Pathologist and Curator of the Museum to the Middlesex Hospital.

WITHERS, J. S., L.R.C.P. Lond., M.R.C.S., has been re-appointed Medical Officer of Health by the Sale Urban District Council.

WOOD, A. J., M.B., C.M. Edin., has been appointed Senior Medical Officer for the Poole Medical Association.

Vacancies.

For further Information regarding each vacancy reference should made to the advertisement (see Index).

CITY OF LONDON HOSPITAL FOR DISEASES OF THE CHEST, Victoria-park.—Pathologist. Salary 100 guineas per annum.

CONSUMPTION HOSPITALS AND ORPHAN HOMES OF SCOTLAND, Bridge of Weir.—Resident Medical Officer. Applications to the Hon. Secretary, 141, West George-street, Glasgow.

FARRINGDON GENERAL DISPENSARY AND LYING-IN CHARITY, 17, Bartlett's Buildings, Holborn, London.—Honorary Dental Surgeon. Also Resident Medical Officer. Salary £100 per annum, with apartments and attendance.

FINSBURY DISPENSARY, Brewer street, Goswell-road, E.C.—Resident Medical Officer. Salary £120 per annum, with a furnished residence in the Institution, and attendance, coals, and gas.

GENERAL HOSPITAL, Nottingham.—House Physician for two years. Salary £100, rising £10 a year to £120, with board, lodging, and washing.

HULME DISPENSARY, Manchester.—House Surgeon. £130 per annum, with apartments, coal, and gas.

JAFFRAY BRANCH OF THE GENERAL HOSPITAL, Gravelly-hill, near Birmingham.—Resident Medical and Surgical Officer. Salary £150 per annum, with board, residence, and washing.

LIVERPOOL DISPENSARIES.—Two Assistant Surgeons, unmarried. Salary £80 for the first year and £90 per annum afterwards, with apartments, board, and attendance. Applications to the Secretary, 34, Moorfields, Liverpool.

METROPOLITAN HOSPITAL, Kingsland-road, N.E.—Assistant Surgeon.

NEWCASTLE-ON-TYNE DISPENSARY.—Visiting Medical Assistant for at least one year. Salary £120 for the first year and £150 afterwards.

NORTHAMPTON GENERAL INFIRMARY.—Assistant House Surgeon, unmarried. Salary £100 per annum, with furnished apartments, board, attendance, and washing.

ROYAL SOUTH LONDON DISPENSARY, St. George's-cross, S.E.—Honorary Surgeon.

SEAMEN'S HOSPITAL SOCIETY, Greenwich, S.E.—House Physician for *Dreadnought* Hospital, Greenwich. Salary £75 per annum, with board and residence. Also Surgeon for Dispensary, 51, East India Dock-road, E. Salary £63 per annum.

ST. MARY'S CHILDREN'S HOSPITAL, Plaistow, E.—Senior Resident Medical Officer for one year. Salary £80 per annum, with residence in the hospital, board, and washing.

VICTORIA HOSPITAL FOR CHILDREN, Queen's-road, Chelsea, S.W.—Ophthalmic Surgeon.

WEST BROMWICH DISTRICT HOSPITAL.—Resident Assistant House Surgeon for six months. Board, lodging, and washing provided. Gratuity £20.

WEST DERBY UNION.—Resident Assistant Medical Officer for the Workhouse, Rice-lane, Walton-on-the-Hill, Liverpool. Salary £100 per annum, with first-class rations, apartments, &c. Salary subject to statutory deduction. Applications to the Union Clerk, Brougham-terrace, West Derby-road.

Births, Marriages, and Deaths.

BIRTHS.

FORD.—On Jan. 6th, at Ladbroke-square, W., the wife of Frank C. Ford M.B., of a son.

LUCAS.—On Jan. 9th,, at Broadway House, Tooting, the wife of Claude R. Lucas, M.R.C.S., L.R.C.P., of a son.

MOORE.—On Dec. 27th, at Oakdene, Walton-on-Thames, the wife of S. J. Moore, M.D., of a daughter.

REES.—On Jan. 8th, at Holmesdale, Penarth, South Wales, the wife of J. Hugh Rees, M.D., of a son.

WORNUM.—On Jan. 8th, at Belsize-park, N.W., the wife of George Porter Wornum, M.R.C.S., of a daughter.

MARRIAGES.

HASTINGS—MUNDELLA.—On Jan. 5th, at St. Mark's, Regent's-park, N.W., by the Rev. J. Sparrow Simpson, Edwin Birchall Hastings, M.D., youngest son of the late William Hastings of Huddersfield, and Theresa, second daughter of the late John Muudella of Nottingham.

HOLME—LAYNG.—On Jan. 4th, at S. Andrew's, Rippingale, Crampton W. Holme, M.R.C.S., Wisbech, to Ethel Mary, eldest daughter of Rev. W. W. Layng, Rector of Rippingale.

HUIE—INGLIS.—On Jan. 4th, at St. Peter's Church, Ashby Parva, Leicestershire, Henry Greville Huie, M.D., to Ida Mary, eldest daughter of C. J. Inglis, Esq.

NIGHTINGALE—COLLISON.—On Jan. 7th, at St. Mary Abbot's, Kensington, Percy Athelstan Nightingale, M.D., second son of the late Percy Nightingale, to Muriel Stoughton, third daughter of the late Charles Stoughton Collison, of Upper Phillimore-gardens, Kensington, W.

SMYTH—BULLOCK.—On Jan. 3rd, at C.M.S. Church, Ningpo, China, Richard Smyth, B.A., M.B., Medical Missionary, to Blanche Emily, second daughter of the Rev. Charles Bullock, B.D., Coomrith, Eastbourne.

TAYLOR—PEECH.—On Jan. 7th, at Holy Trinity Church, Roehampton, S.W., Alfred Ernest Taylor, M.B., B.S. Lond., F.R.C.S. Eng., of Lancaster-gate, W., to Mary Emma, eldest daughter of William Peech, of Fern Bank, Roehampton-park, S.W.

WILLIS—THRING.—On Jan. 5th, at St. Peter's, Bournemouth, Cryil Hamer Willis, M.R.C.S., L.R.C.P. Lond., younger son of the late M. M. Willis, of Beckenham, Kent, to Annie Bertha, youngest daughter of the late Robert Thring of Winchester.

DEATHS.

ARMSTRONG.—On Jan. 5th, suddenly, at 3, Bentinck-villas, Newcastle-upon-Tyne, Mary, dearly beloved wife of Henry E. Armstrong, Medical Officer of Health.

FARR.—On Jan. 11th, suddenly, at Penrhyn Lodge, Cambridge-park, Twickenham, George Frederick Farr, L.R.C.P., M.R.C.S., in his 67th year.

MOUAT.—On Jan. 4th, at Palace-gardens-terrace, Kensington, Surgeon-General Sir James Mouat, K.C.B., V.C., Q.H.S.

SEWELL.—On Jan. 2nd, at Mentone, James Arthur Sewell, M.D., of Les Ecureuils, Quebec, late H.M.'s Bengal Medical Service.

N.B.—A fee of 5s. is charged for the insertion of Notices of Births, Marriages, and Deaths.

Medical Diary for the ensuing Week.

OPERATIONS.

METROPOLITAN HOSPITALS.

MONDAY (16th).—London (2 P.M.), St. Bartholomew's (1.30 P.M.), St. Thomas's (3.30 P.M.), St. George's (2 P.M., Ophthalmic 1.15 P.M.), St. Mary's (2.30 P.M.), Middlesex (1.30 P.M.), St. Mark's (9.30 A.M.), Chelsea (2 P.M.), Samaritan (Gynæcological, by Physicians, 2 P.M.), Soho-square (2 P.M.), Royal Orthopædic (2 P.M.), City Orthopædic (4 P.M.), Gt. Northern Central (2.30 P.M.), West London (2.30 P.M.), Westminster (2 P.M.), London Throat (2 P.M.).

TUESDAY (17th).—London (2 P.M.), St. Bartholomew's (1.30 P.M.), Guy's (1.30 P.M.), St. Thomas's (3.30 P.M.), Middlesex (1.30 P.M.), Westminster (2 P.M.), West London (2.30 P.M.), University College (2 P.M.), St. George's (1 P.M.), St. Mary's (1 P.M.), St. Mark's (2.30 P.M.), Cancer (2 P.M.), Metropolitan (2.30 P.M.), London Throat (2 P.M. and 6 P.M.), Royal Ear (3 P.M.).

WEDNESDAY (18th).—St. Bartholomew's (1.30 P.M.), University College, (2 P.M.), Royal Free (2 P.M.), Middlesex (1.30 P.M.), Charing-cross (3 P.M.), St. Thomas's (2 P.M.), London (2 P.M.), King's College (2 P.M.), St. Mary's (2 P.M.), National Orthopædic (10 A.M.), St. Peter's (2 P.M.), Samaritan (2.30 P.M.), Gt. Ormond-street (9.30 A.M.), Gt. Northern Central (2.30 P.M.), Westminster (2 P.M.), Metropolitan (2.30 P.M.), London Throat (2 P.M.), Cancer (2 P.M.).

THURSDAY (19th).—St. Bartholomew's (1.30 P.M.), St. Thomas's (3.30 P.M.), University College (2 P.M.), Charing-cross (3 P.M.), St. George's (1 P.M.), London (2 P.M.), King's College (2 P.M.), Middlesex (1.30 P.M.), St. Mary's (2.30 P.M.), Soho-square (2 P.M.), North-West London (2 P.M.), Chelsea (2 P.M.), Gt. Northern Central (Gynæcological, 2.30 P.M.), Metropolitan (2.30 P.M.), London Throat (2 P.M.).

FRIDAY (20th).—London (2 P.M.), St. Bartholomew's (1.30 P.M.), St. Thomas's (3.30 P.M.), Guy's (1.30 P.M.), Middlesex (1.30 P.M.), Charing-cross (3 P.M.), St. George's (1 P.M.), King's College (2 P.M.), St. Mary's (2 P.M., Ophthalmic 10 A.M.), Cancer (2 P.M.), Chelsea (2 P.M.), Gt. Northern Central (2.30 P.M.), West London (2. 30 P.M.), London Throat (2 P.M. and 6 P.M.).

SATURDAY (21st).—Royal Free (9 A.M. and 2 P.M.), Middlesex (1.30 P.M.), St. Thomas's (2 P.M.), London (2 P.M.), University College (9.15 P.M.), Charing-cross (3 P.M.), St. George's (1 P.M.), St. Mary's (10 P.M.), London Throat (2 P.M.).

At the Royal Eye Hospital (2 P.M.), the Royal London Ophthalmic (10 A.M.), the Royal Westminster Ophthalmic (1.30 P.M.), and the Central London Ophthalmic Hospitals operations are performed daily.

SOCIETIES.

MONDAY (16th).—SOCIETY OF ARTS.—8 P.M. Dr. S. Rideal: Bacterial Purification of Sewage. (Cantor Lecture.)

TUESDAY (17th).—PATHOLOGICAL SOCIETY OF LONDON.—8.30 P.M. Mr. A. Barker: Final Sequel to a Case already reported of Removal of Cystic Disease of a supposed Accessory Thyroid (illustrated by lantern slides).—Mr. T. Carwardine: Lantern Photographs of a Case of Molluscum Fibrosum with Neuroma of the Brachial Plexus.—Dr. H. P. Potter: Crushing Fracture of the Cervical Spine.—Dr. R. Crawfurd: Cystic Suprarenal Bodies.—Dr. H. D. Rolleston: Cysts in Suprarenal Body.—Dr. M. Fletcher: Tuberculous Cholangitis.—Mr. H. B. Robinson: Multilocular Tumour from Inguinal Canal in a Female.—Mr. C. F. Beadles: Lesion of Pancreas with Fat Necrosis. Card Specimens:—Mr. Carwardine: (1) Papilloma of Rectum discharged spontaneously; (2) Enucleated Prostatic Myomata associated with Vesical Calculus.—Mr. Beadles: Healed Perforation of Duodenum after Passage of Gall-stones.

CHELSEA CLINICAL SOCIETY (Holy Trinity Parish Hall, Pavilion-road, S.W.).—8.30 P.M. Papers:—Dr. J. H. Dauber: A Plea for Greater Attention to Asepsis in Hospital and Private Practice.—Dr. C. C. Gibbes: Pathology of Mitral Stenosis (addenda to paper read last meeting).—Dr. J. Blumfeld: Administration of Ether to Infants and Young Children.

WEDNESDAY (18th).—ROYAL MICROSCOPICAL SOCIETY (20, Hanover-square, W.).—8 P.M. President: Annual Address.

ROYAL METEOROLOGICAL SOCIETY (Institution of Civil Engineers, Gt. George-street, Westminster, S.W.).—7.30 P.M. Ordinary Meeting. 7.45 P.M. Report of the Council. Election of Officers and Council. Mr. F. C. Bayard (President): The Government Meteorological Organisations in Various Parts of the World (illustrated by lantern slides).

NORTH-WEST LONDON CLINICAL SOCIETY (North-West London Hospital).—8.30 P.M. Monthly Demonstration of Clinical Cases.

THURSDAY (19th).—HARVEIAN SOCIETY OF LONDON (Stafford Rooms, Titchborne-street, Edgware-road).—8.30 P.M. Annual General Meeting. Election of Officers. Presidential Address. Annual Conversazione.

FRIDAY (20th).—EPIDEMIOLOGICAL SOCIETY OF LONDON (11, Chandos-street, Cavendish-square, W.).—8.30 P.M. Paper:—Dr. B. Low: Epidemic Cerebro-Spinal Meningitis.

SOCIETY OF ANÆSTHETISTS (20, Hanover-square, W.).—8.30 P.M. Continuation of Adjourned Discussion on Selection of an Anæsthetic.

LECTURES, ADDRESSES, DEMONSTRATIONS, &c.

MONDAY (16th).—WEST LONDON POST-GRADUATE COURSE (West London Hospital, W.).—5 P.M. Mr. S. Edwards: The Methods of Examining the Bladder and Rectum.

TUESDAY (17th).—ROYAL INSTITUTION OF GREAT BRITAIN.—3 P.M. Prof. E. Ray Lankester: The Morphology of the Molluscs.

NATIONAL HOSPITAL FOR THE PARALYSED AND EPILEPTIC (Bloomsbury).—3.30 P.M. Sir W. Gowers: Epilepsy.

WEST-END HOSPITAL FOR DISEASES OF THE NERVOUS SYSTEM (73, Welbeck-street, W.).—4 P.M. Dr. T. D. Savill: Cases of Infantile Paralysis.

THURSDAY (19th).—LONDON TEMPERANCE HOSPITAL.—2 P.M. Clinical and Pathological Demonstration to Senior Students.

WEST LONDON POST-GRADUATE COURSE (West London Hospital, W.).—5 P.M. Mr. S. Edwards: The Methods of Examining the Rectum and Bladder.

CHARING-CROSS HOSPITAL.—4 P.M. Mr. Boyd: Demonstration of Surgical Cases. (Post-Graduate Class.)

FRIDAY (20th).—ROYAL INSTITUTION OF GREAT BRITAIN.—9 P.M. Prof. Dewar: Liquid Hydrogen.

Notes, Short Comments, and Answers to Correspondents.

EDITORIAL NOTICES.

IT is most important that communications relating to the Editorial business of THE LANCET should be addressed *exclusively* "TO THE EDITORS," and not in any case to any gentleman who may be supposed to be connected with the Editorial staff. It is urgently necessary that attention be given to this notice.

It is especially requested that early intelligence of local events having a medical interest, or which it is desirable to bring under the notice of the profession, may be sent direct to this Office.

Lectures, original articles, and reports should be written on one side of the paper only, AND WHEN ACCOMPANIED BY BLOCKS IT IS REQUESTED THAT THE NAME OF THE AUTHOR, AND IF POSSIBLE OF THE ARTICLE, SHOULD BE WRITTEN ON THE BLOCKS TO FACILITATE IDENTIFICATION.

Letters, whether intended for insertion or for private information, must be authenticated by the names and addresses of their writers, not necessarily for publication.

We cannot prescribe or recommend practitioners.

Local papers containing reports or news paragraphs should be marked and addressed "To the Sub-Editor."

Letters relating to the publication, sale, and advertising departments of THE LANCET *should be addressed "To the Manager."*

We cannot undertake to return MSS. not used.

MANAGER'S NOTICES.

THE INDEX TO THE LANCET.

THE Index to Vol. II. of 1898, which was completed with the issue of Dec. 31st, and the Title-page to the Volume, were given in THE LANCET of Jan. 7th.

VOLUMES AND CASES.

VOLUMES for the second half of the year 1898 are now ready. Bound in cloth, gilt lettered, price 18*s.*, carriage extra.

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PROFESSIONAL UNION.

WE have noted in another column that a general meeting was held yesterday (Thursday) afternoon of the East Suburban Medical Protection and Medico-Ethical Society, Limited, and a perusal of the annual report of the society makes us select the large subject of Professional Union for a few words of exposition.

The East Suburban Medical Protection and Medico-Ethical Society, which has been formed to promote the interests of medical practitioners in the East of London and in suburban Essex, was called into being by an attempt on the part of the Plaistow Maternity Charity and District Nurses' Home—a pseudo-charitable institution with the methods of which readers of THE LANCET have been kept fully informed (Abuse of Nursing Charities, THE LANCET, August 27th and Sept. 17th and 24th, 1898)—to establish a branch in East Ham. A

meeting of the local medical profession was held at the beginning of the year in protest against the project of development planned by the Maternity Charity with the result that to a certain extent that project was abandoned. Encouraged by the swift success that followed upon this show of a united front a larger meeting was then held at Stratford and as a result a society was formed and incorporated bearing the title we have already quoted and designed to protect its members against all unfair competition and to safeguard their material interests. In the memorandum of association, a most comprehensive document, the society is said to be established for the purpose of mutual helpfulness in forming a common fund by the contributions of its members ..... to maintain the status of registered medical practitioners, to assist them in carrying on their profession ..... by (among other things)—

(*a*) Investigating abuses in medical charities;
(*b*) Attempting to obtain adequate representation of medical practitioners on the governing bodies of medical charities;
(*c*) Attempting to suppress medical aid societies and clubs which are not carried on by duly registered medical practitioners and in an honourable, professional, and satisfactory manner; and
(*d*) Establishing a public medical service, a hospital or dispensary chiefly managed by registered medical practitioners, if and when desired by a majority of the members in general meeting assembled.

There are many other objects set down—in fact, the alphabet is well-nigh exhausted in enumerating them—but all the others, as well as the ones we have quoted, are covered by "(*q*) To support and safeguard the interests of duly registered medical practitioners" and need not be enumerated now. They deal with such matters as legal protection, debt-collecting, and the establishment of an agency for the transfer of practices.

The first four objects which this young society has set before it seem to us to comprise in themselves an excellent reform programme. If the society can by united effort carry out these in reality as well as in name they will set an example to other medical men everywhere of how to form a professional union (which is not a trades' union). To investigate medical charities has now become the duty of every medical man towards his neighbour and towards himself. The one thing that a "charity" is always ready to give away is medical aid. Let all medical men see that the institutions which offer free or on ludicrous pecuniary terms the services of our profession are managed solely and truly for the benefit of the suffering poor and not for the profit or social aggrandisement of persons richer than the medical men to be exploited. It is well known to all our readers that many so-called "medical aid" societies have only one benefit to offer the members of their association and that is professional attendance when sick, but that in spite of this the unfortunate officers of such societies are underpaid, while they are made the instruments to destroy professional union. The development of those societies which allow all and every person regardless of their incomes to exact service from medical men should be stoutly resisted by medical men in the interests of the public and especially of the suffering poor who lose by their agency the ministration properly due to them. And the most effectual resistance which can be offered is the organisation by the local medical men of a real medical aid society, one which will offer to those whose circumstances make them proper subjects for club treatment good and thoughtful medical treatment by practitioners of standing and experience.

A NEW CASE-PAPER.

MESSRS. JOHN WRIGHT AND CO. of Bristol have sent us some specimens of a new case-paper designed by Mr. J. K. Couch and Dr. R. Le C. Lancaster. On the one side are the usual headings of "Family History," "General Condition," "Respiratory System," and the like, while on the other side are diagrammatic figures of the chest and pelvis from both the back and the front. There are also diagrams of the larynx, the posterior nares, the palatal arch, the tongue, and the soles of the feet. There are in addition views of the side of the face and head, a sagittal section of the female trunk, a view of the female pelvis from above, and plans of the hands and feet. The price is 15*s.* per 500 or 26*s.* per 1000, or bound in books of 250, indexed and numbered, 11*s.* They seem to us to be eminently compact and should prove very useful as a means of keeping a shorthand record of a case.

THE MOTOR TRICYCLE.

To the Editors of THE LANCET.

SIRS,—As a country practitioner I would like to ask if any of your subscribers have any experience of the motor tricycle, and if so, whether they can recommend such means of locomotion to medical practitioners who have long journeys to make.

I am, Sirs, yours faithfully,

Jan. 10th, 1899. OMICRON.

LYCETOL.

To the Editors of THE LANCET.

SIRS,—The action of lycetol in three cases that have come under my observation has been so marked that I am induced to record my experience and to ask any of your readers who may also have used it whether their experience is similar to mine or whether the results obtained when I was using it were merely a matter of accident. The first case was one of gouty sciatica of more or less intensity for about two years. During a desultory conversation not long since the preparation was accidentally alluded to as having been beneficial in similar instances and though at the time sceptical as to any probable good that might result I decided to try it. After its exhibition for ten days or so very great improvement was apparent. At the end of a month every trace of sciatica had disappeared and it has not since returned. The second case was one of rheumatic arthritis involving both carpal joints, especially the left, and the first phalanx of the left thumb. There was great pain, tenderness, and enlargement of both joints. Lycetol was given in the usual doses of from 8 to 15 grains twice daily, at 11 A.M. and 4 P.M., and on two occasions it was taken thrice during the day. Within six days the pain had practically ceased and within seventeen days the swelling and tenderness in each wrist had greatly subsided, the right one being nearly normal in size and the swelling in the left although not so markedly decreased is still becoming reduced. The third case was not that of a patient but of a brother practitioner who for many weeks had been suffering from gout and whose system was saturated with uric acid. I met this gentleman a few weeks since and related my experience to him as above. As he had been ill for some time with no marked abatement he elected to try lycetol. I heard from him a few days since and he says that the preparation "has done wonders for him" and he "will not be without it for the future." No other treatment was adopted or any other drug used while lycetol was being taken and it was administered in alkaline effervescent mineral water.

I am much interested to learn what it may have done in the hands of others in order to judge whether the rapid improvement in the three instances I have related may be fairly attributed to its use or whether it is to be viewed merely as a series of remarkable coincidences. Should the former prove to be the case we are probably in possession of a valuable adjunct in the treatment of rheumatism and gout and their allied disorders.—I am, Sirs, yours faithfully,

Jan. 3rd, 1899. INQUIRENS.

WANTED A HOME FOR A CASE OF ASTHMA.

To the Editors of THE LANCET.

SIRS,—I would feel obliged if you could inform me through THE LANCET of any places recommended for asthma, and especially of any sort of convalescent home or institution where a case could be taken in; a moderate weekly payment if necessary could be made. The patient is a young woman of about twenty-five years of age, and is a milliner by trade. The case is of the bronchial type and, as far as I can make out, suited by a mild, rather moist air, sheltered from high cold winds.

I am, Sirs, yours faithfully,

Jan. 9th, 1899. CANTAB.

*** We cannot recommend with any confidence a place that will be suitable for a particular case of asthma. From what our correspondent tells us we think that either Bournemouth or Torquay or else Ilfracombe might perhaps be tried with advantage. Our advertisement columns may give our correspondent the advice which he seeks with regard to a suitable home.—ED. L.

WHY IS THE FEE WITHHELD?

To the Editors of THE LANCET.

SIRS,—May I ask your opinion on the following case? On Christmas morning I was called to see a child suffering from severe burns about the body. I duly attended and thoroughly dressed the child and ordered removal of the patient to the local cottage hospital where I am an honorary medical officer. I saw the child two hours after admission. The child died the same night. An inquest was held and I was called to give evidence. I claimed a fee as I gave evidence about what had occurred in my private practice. The child was never redressed in the hospital so that I could only speak as to the injuries I had seen outside. Am I right in claiming a fee, for it has been refused? Thanking you in anticipation of your answer,

I am, Sirs, yours faithfully,

Jan. 10th, 1899. M.R.C.S.

*** Under the circumstances narrated we consider that our correspondent is entitled to a fee. He did not treat the patient or attend the inquest save in a private capacity.—ED. L.

FORMALDEHYDE DISINFECTION.

THE Chicago *Railway Surgeon* of Nov. 15th, 1898, states that the Chicago Health Department has abandoned all forms of lamps, autoclaves, and other apparatus for the production of formaldehyde. The disinfectors of the department fumigate some 1200 premises annually. They are now furnished with a bottle of formalin (a 40 per cent. solution of formaldehyde gas in water), several sheets are hung up in the appartments to be disinfected, and the solution is sprayed over them, about 150 c.c. (5 fl. oz.) of the solution to each thousand cubic feet being used. The windows and any cracks there may be are sealed up before the fumigation, and the room is then left for at least four hours. Control cultures of various micro-organisms left in the rooms during the fumigation are entirely killed.

EUCAINE.

To the Editors of THE LANCET.

SIRS,—Would you inform me (1) if eucaine is safe to use hypodermically in *infants and young children* as a local anæsthetic, and if so in what strength and quantity? (2) What is an efficient strength for painting mucous membranes to produce local anæsthesia in small operations like removing nasal mucous polypi, tonsillotomy, &c.?

(3) What is the best method of preparing a solution that will keep without deterioration or decomposition? (4) In spasmodic rigidity of the os uteri in the first stage of labour is the local application of eucaine an efficient substitute for chloral internally and chloroform inhalation? If so, when should it be preferred to the above remedies, is there any danger in its use, and what is the *modus operandi* of its application? If you or any of your correspondents would give me the above information or refer me to any literature that will answer these questions I should be very grateful.

I am, Sirs, yours faithfully,

Jan. 8th, 1899. IGNORAMUS.

*** 1. We do not think sufficient is known of the action of eucaine to make it safe to use as an injection for infants. Professor Ponchet read a paper in 1897 before the Société de Thérapeutique showing eucaine to be a dangerous cardiac depressant. 2. From 5 per cent. to 8 per cent. is the usual strength of the solution of hydrochloride of eucaine necessary to produce anæsthesia for such minor operations. A paper has been read by Dr. Maclennan and the late Professor Charteris on eucaine before the Royal Society of Edinburgh. Perhaps our readers can give "Ignoramus" information on other points in his letter.—ED. L.

CAULS.

A LETTER has been received by a correspondent, a medical man, asking him if he feels disposed to buy a caul or, in case the article is of no use to him, if he can recommend an establishment where cauls are purchased. We believe that there is still some market for cauls among sailors who retain their belief in the efficacy of the membranes as a protection against shipwreck and drowning and we endorse the advice given by our correspondent to try the mercantile marine. Notices of "Cauls For Sale Within" were to be seen recently in windows in the vicinity of the docks both of London and Liverpool, but it is some time since we have noticed an advertisement of a caul for sale in the daily press. It may be remarked that the sale of cauls so far from being a very ancient custom is a comparatively modern innovation. The witchcraft of the Middle Ages declared against the caul retaining any virtue whatever if parted with by gift or sale to any but a member of the child's kindred. Probably it was the midwife, as is pointed out in "Credulities Past and Present," by Mr. W. Jones, who discountenanced this exclusive view of the matter and proceeded to turn the accident of parturition into coin of the realm.

"A SANITARY COFFIN."

NEARLY a year ago Mr. C. S. Bowker of Cwmbrau House, Newport, Monmouthshire, sent us a model of what he describes as a sanitary coffin, requesting us to express our opinion upon it. The coffin is constructed of thin metal lined with porous ware. It is closed by porous tiles luted with plaster of Paris. Carefully following the inventor's directions we placed the body of a rabbit in the coffin and sealed it up in the manner directed. At no time did the coffin appear to be offensive. After several months the body of the rabbit had shrunk considerably and liquefied. The contents, however, were decidedly less offensive than would be the case under other circumstances. The principle appears to be that during the process of putrefaction the offensive gases evolved pass through the porous ware, thus coming into intimate association with the oxygen of the air. In this way deodorisation and destruction of the gaseous putrefactive products are to some extent effected.

FOR ONE SHILLING:

To the Editors of THE LANCET.

SIRS,—The following little episode occurring this morning in my practice will, I think, interest your readers and the profession generally, while it may serve at the same time to reveal the abyss of degradation to which we are fast hastening. A young married woman was shown into my consulting-room and forthwith informed me that she presented herself for the purpose of being medically examined for a club which she proposed to join. She thereupon handed me a paper and hastily scanning it down I found one side already filled up, presumably by herself, with answers to questions of a personal character, but turning the paper over I found as heading: "National Deposit Friendly Society, Medical Examination Form," and immediately beneath this appeared the following legend:—

> "*Any Registered Medical Practitioner will make the Examination for the Fee of 1s.*"

When I had recovered myself I inquired whether this was the fee she expected to pay for my examining her and she replied that she was given to understand that such was the fee the medical man was entitled to. Handing her back the paper—to her evident astonishment—I intimated grave doubts as regards *any* registered medical practitioner so far forgetting both himself and his profession, but I suggested that if she wrote to the "National Deposit Friendly Society" it was quite likely they would send down to Windsor one of their own so-called medical officers who for that princely remuneration might be willing to oblige her. She promised to write and left quite charmed with the dazzling prospect. Now, Sirs, we have seen much of change and so-called advancement in this eventful century, but never aught like this—appraised and knocked down at 1s. in favour of the "National Deposit Friendly Society" the skilled labour and scientific research of any registered medical practitioner of Great Britain and Ireland!

I am, Sirs, yours faithfully,

New-road, Windsor, Jan. 10th, 1899. W. LISLE GOODRIDGE.

THE PUBLIC COST OF QUACKERY.

AN inquest was held at Coventry last Saturday on the body of a child who had been attended by a Mr. Millerchip, also styled "Dr." Millerchip. A few hours before the child died a medical man was sent for on the advice of Millerchip. At the inquest the medical man testified that the deceased had died from laryngitis and pneumonia and in his summing up the coroner, Mr. C. W. Iliffe, pointed out that such cases entailed a great and unnecessary expense upon the ratepayers, as the necessity for the inquest arose simply out of the employment of unqualified persons as medical men. These people could not give death certificates nor could qualified men if they were only called in a few hours before the death of the patient, and consequently inquests became necessary. We take our account of the case from the *Midland Daily Telegraph* and we see that the coroner's officer during the proceedings put in a letter from our contemporary's columns in which Millerchip stated that he was a qualified medical man. There is no one of this name in the current issue of the Medical Register, but a Thomas Millerchip was removed from the Register in November, 1885, having been sentenced to ten years' penal servitude for procuring abortion.

Reader.—There is no such book as "The Earl and the Doctor." The title of the book is "South Sea Bubbles," the authors being described as "The Earl and the Doctor." The book, a lively and unconventional account of a tour in Polynesia, was written by the late Earl of Pembroke and the late George H. Kingsley, a medical man and a brother of the more famous writers Charles and Henry Kingsley.

A.B.—"Anatomy for Nurses" is a good little book which might be suitable for the purpose, and the first two lectures in Mr. Osborn's book, "First Aid to the Injured," give much information. Why not make a selection from Gray's Anatomy if more detail is required?

H. R. G. and *E. A. A.*—We have seen the advertising Christmas cards already. They were in circulation, we have been informed, before the improper use of our notice was brought to the knowledge of the company.

Scalpel.—We recommend "A Dictionary of Medicine," by Dr. G. M. Gould, published in England by Messrs. Baillière, Tindall, and Cox, King William-street, W.C.

Viator, whose question we answered last week, has sent some stamps which we desire to return to him, but we have mislaid his address.

Public Vaccinator.—Yes. A sterilised needle or lancet blade is used by some operators and a special instrument by others.

Mr. E. W. Diver's communication escaped acknowledgment. The paper will be inserted.

A Registered Medical Practitioner is thanked for his communication.

COMMUNICATIONS not noticed in our present issue will receive attention in our next.

METEOROLOGICAL READINGS.

(Taken daily at 8.30 a.m. by Steward's Instruments.)

THE LANCET Office, Jan. 12th, 1899.

Date.	Barometer reduced to Sea Level and 32° F.	Direction of Wind.	Rainfall.	Solar Radia in Vacuo.	Maximum Temp. Shade.	Min. Temp.	Wet Bulb.	Dry Bulb.	Remarks at 8.30 A.M.
Jan. 6	30·28	S.W.	...	50	48	38	40	41	Overcast
,, 7	29·86	S.W.	...	61	52	41	46	47	Overcast.
,, 8	29·77	S.W.	0·03	70	54	47	48	50	Cloudy
,, 9	29·58	S.W.	...	75	55	47	47	48	Fine
,, 10	29·27	S.W.	...	56	52	47	48	50	Cloudy
,, 11	29·52	N.W.	0·11	60	49	39	38	40	Hazy
,, 12	29·32	S.W.	0·29	75	56	40	47	48	Raining

During the week marked copies of the following newspapers have been received: *Grimsby News, Newcastle Daily Chronicle, Daily Telegraph, Lisburn Standard, Times of India, Pioneer Mail, Daily Chronicle, Norfolk Standard, Preston Herald, Birmingham Gazette, Stratford Express, Glasgow Evening News, Stalybridge Reporter, Glamorgan Times, Leyton Express, Newry Standard, Yorkshire Post, Barnet Press, Irvine Herald, Liverpool Daily Post, Public Health, Star, Indian Daily News, Bournemouth Directory, Architect, Builder, Citizen, Scotsman, Hampshire Telegraph, Leeds Mercury, Sheffield Independent, The Welshman, Sunderland Herald, Brighton Gazette, Darlington Echo, Dundee Courier, Sanitary Record, Reading Mercury, Local Government Chronicle, Mining Journal, Hertfordsdire Mercury, City Press, Surrey Advertiser, Daily Free Press (Aberdeen), Evening Gazette (Aberdeen), Local Government Journal, Derbyshire Times, Midland Daily Telegraph, Portadown News, Star (Guernsey), Bradford Observer, Walsall Advertiser, Reynold's Newspaper, Whitehaven Advertiser, Cheshire County News, Manchester Guardian, Bristol Mercury, Nottingham City News, Middlesex County Times, West Middlesex Herald, Bath Herald, &c., &c.*

Communications, Letters, &c., have been received from—

A.—Mr. G. C. B. Atkinson, Long Clawson; Mr. F. C. Abbott, Lond.; Mons. J. Astier, Paris; Aerators, Ltd., Lond.; Messrs. Armour and Co., Lond.; Dr. F. Arnold, Bulawayo; Dr. J. Anderson, Lond.; Dr. Althorp, Bradford; Mr. R. B. Anderson, Lond.

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E.—E. C. S., Ingatestone.

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N.—Newark-on-Trent Hospital, Secretary of; Dr. F. B. Norris, Surbiton; National Provident Institution, Lond.; Dr. A. Newsholme, Brighton.

O.—Odontological Society of Great Britain, Lond., Hon. Secretaries of; Mr. S. Osborn, Lond.

P.—Dr. E. Perier, Paris; Dr. F. Page, Newcastle-on-Tyne; Pure Cane Sugar Co., Lond.; Messrs. Padmore and Sons, Birmingham; Plymouth Borough Asylum, Ivybridge, Secretary of.

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V.—Victoria Hospital for Children, Lond., Secretary of; Volunteer Medical Staff Corps, Lond., Captain-Adjutant of; Vinolia Co., Lond.

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Letters, each with enclosure, are also acknowledged from—

A.—Mr. R. R. Anderson, Fernhill; A. S. F.; A. G. S.; Messrs. Allen and Hanburys, Lond.; Dr. J. Attlee, Lond.; A. L. R.; A. H.; Dr. H. Ashby, Manchester.

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I.—Institut Verneuil, Paris, Director of.

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